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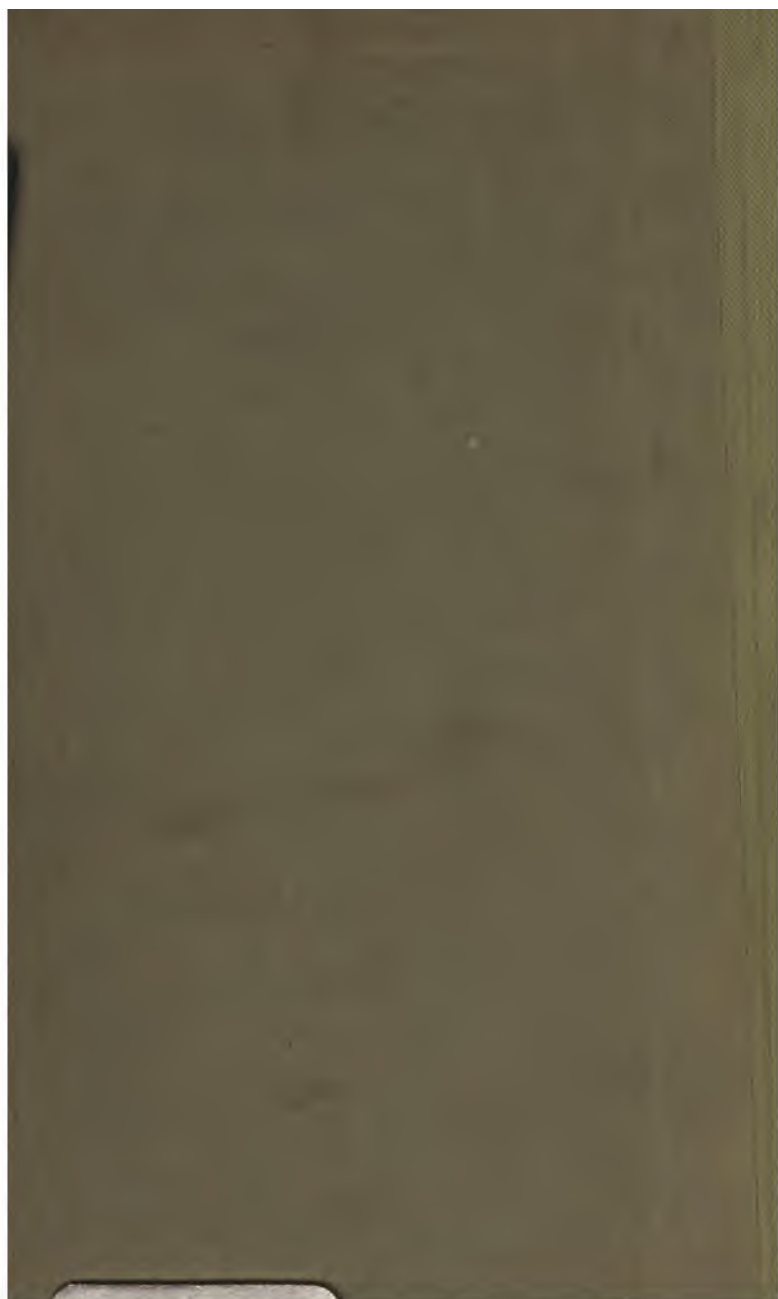
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P. n. 104





A
PERPETUAL CALENDAR

WITH
NOTES AND EXPLANATIONS
ON
CHRONOLOGY, CHRONOLOGICAL CYCLES
AND OTHER USEFUL INFORMATION

Im

BY
REV. L. S. F. PINAUD



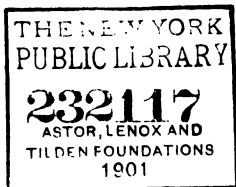
*"Knowledge is not in every one."—1 Cor. viii, 7
But is useful to every one.*

Nihil obstat quin imprimatur

✠ Thomas

Episcopus Albanensis

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PREFACE.

While I was studying for the holy ministry, there seemed a probability that I might be sent as a missionary to the north shore of the St. Lawrence. This is a territory where mails were formerly received only when navigation was open. And the waters are often unnavigable, on account of the ice, until late in the spring. There was, then, a probability that the "ordo" could not reach me in due season. I therefore devoted much time to the study of the Gregorian Calendar, in order to be able to make my own, and thus be independent, for the offices of the Church, of the locked up waters of the north.

I was not assigned to this mission, and in the press of other duties, I laid aside my little work for several years. Greater leisure, in attending my duties as convent chaplain, brought to my mind the idea of taking up again the study of an interesting science, to complete the work once laid aside, and, by placing it before the public, to popularize the science and put it within the reach of every one.

The way it has so far been treated by different authors, leaves the whole matter incomprehensible to many. For instance, the *International Cyclopaedia*, speaking of Easter and of the Gregorian Calendar, says: "The method on which this calendar is constructed is too complex for description here." Vol. V, page 230. And the "*Encyclopaedia for Everyday Use*," speaking of the celebration of Easter as being fixed in such a way as to avoid the concurrence with the Jews, says: "The determination of Easter is an affair of considerable complication." Page 207. And when it comes to the Dominical Letters, instead of giving the rules, the above-mentioned cyclopaedia, Vol. V, page 59, says: "Rules and tables for finding them are given in prayer-books, Breviaries, etc." In my opinion, very few laymen will incur the expense of from \$5.00 to \$15.00 for a set of Breviaries, for the mere pleasure of knowing the rules about the Epact, the Golden Number, the

Dominical Letters, etc., in order to be able to locate Easter and all the other movable feasts.

In this little book now given to the public, it is no more a complex question to solve. The definitions are clear and the tables complete in every way. With the aid of this Perpetual Calendar, any child who can read will find, in a moment, Easter with all the movable feasts, and any given day of the week for any period, whether before the Gregorian correction of the calendar by Julius Caesar or after. By looking at the day on which a year begins, one has, at a glance in the calendar, a complete one for every year, from the beginning to the end of the world. One can by it detect any error that might have crept into any work on this subject, either through negligence or lack of proper knowledge. I have an instance of the kind in the International Cyclopaedia: "So, again, as late as the year 1610, the battle of Weissenburg, near Prague, is described by contemporary chroniclers as having been fought upon a Sunday on which the Church sings "Reddite quae sunt Caesaris Caesari;" that is the twenty-second Sunday after Pentecost, which, in the year referred to, fell upon the 8th of November." It is not so. For the 8th of November, 1610, fell on Monday, the year having began on Friday. Easter was the 11th of April and Pentecost the 30th of May. This leaves four Sundays in June, four in July, five in August, four in September and five in October; in all 22, and the last Sunday in October fell on the 31st.

This little book contains also a mass of information upon many useful subjects or questions, and I shall consider myself amply rewarded, if it is kindly received by the general public and if the solution of these once complex questions be thereby the easy work of the many, rather than, as now, the result of the long and patient research of the few.

L. S. F. P.

ALBANY, N. Y., Dec. 8, 1896.

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ABBREVIATIONS:

- G. N.—Golden Number.
- D. L.—Dominical Letter.
- D. M.—Day of the Month.
- A. M.—Year of the World.
- A. D.—Year of our Lord.
- B. C.—Before Christ.
- S. C.—Solar Cycle.

DIRECTIONS FOR USING TABLES AND CALENDARS.

To find any given day of the week in the first table, from the year 1 to 3956 A. M., see the day on which that year began (pages 37-53) and refer to the calendar of the same day. For instance, 1656 A. M., the year of the Deluge, which began the seventeenth day of the second month, opened on Monday, and turning to the Calendar Monday-Monday, (page 22) you have the Calendar for the whole year.

The days of the week, during the period which elapsed from 3956 A. M. to 2500 A. D., are found in the same way. (Pages 139-193).

But if any one wishes to know on which day Easter is to be celebrated in any given year, he must find the *Epact* and the *Dominical Letter* in the Table for the above-mentioned period, and then refer to a Paschal Table, (pages 104-107-108). Should you wish to find Easter for 1898, go to the Table (page 180) and you will find that the Epact is VII and the Dominical Letter B. Referring to the first Paschal Table (104), you will find the Epact VII in the square of April 6, and B in the square of the 10th of April, which is the day assigned for the celebration of Easter.

The Dominical Letter must not be taken in the same square with the Epact, but in the following one in which it is found.

In a leap-year, it is always the last letter that is chosen, because it indicates the Sundays from the 25th of February to the end of the year.

Should you choose the second Paschal Table (107), you have VII on the line with E, and going down to **B** you find, on the same line, Septuagesima, the 6th of February, Ash-Wednesday, the 23d, and Easter the 10th of April.

With the Revised Paschal Table, (108) you find the Dominical Letter **B** and in the opposite Cycle of Epacts, find also VII or 7; on the same line is the date of Easter and also the dates of all the other movable feasts during the year. Saturday before 1898, refers to the calendar of the year beginning on that day (p. 180). This calendar is for any year beginning on Saturday. The date of Easter in any past year and in any year to come, up to 2500 A. D., can be ascertained as simply and accurately, by consulting any of the Paschal Tables. Or a person may, for some reason, desire to ascertain the day of the week upon which any given event in the past occurred, be it simply one in his own life or one of historical importance, it can be found as easily and accurately as that of Easter, here illustrated.

Or one may know that an event took place on a certain day of the week, and may not know the date of the month. Then find the day upon which that year began and the calendar for years beginning on that same day, and you can ascertain the day of the month.

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A PERPETUAL CALENDAR

PART FIRST

CHAPTER I.

DEFINITIONS AND HISTORY OF THE DIVISIONS OF TIME

The Calendar, from Calendæ, the first day of the Roman month, is the mode of adjusting the months and the other divisions of the civil year to the natural or solar year. Or, to be more precise, it is the table or almanac which contains the order of days, weeks, months and feasts of the year.

1. Day, is a word which comes from the Latin Dies, day, or Dium, Divum, the sky, and meant originally the space of time during which it is light, in opposition to the space of darkness: "And there was evening and morning one day." Genesis, 1, 5. It is the earth's revolution that causes the vicissitude or change of day and night. There are four kinds of days: I, Natural; II, Artificial; III, Civil; IV, Sidereal. I, the time from noon to noon, or midnight to midnight, is called Natural day. II, the time between the rising and the setting of the sun, is called Artificial day. III, the Civil day is a period of twenty-four hours, beginning and ending at midnight. It is not a complete rotation of the earth, but a complete alternation of light and darkness that constitutes a Solar or Civil day. It is measured between two meridian passages of the sun and is about four minutes longer than the Sidereal day. The mean solar day is divided into twenty-four hours, the hours into minutes and the minutes into seconds. IV, The Sidereal day is the period of time elapsed during a complete rotation of the earth noted from a particular fixed star south or on the meridian, when the same star comes again to the meridian the next day. That portion of time is always the same length, on account of the uniform motion of the earth on its axis. Its exact length is twenty-three hours, fifty-six minutes and four seconds of mean time. I think it will not be out of place to elucidate somewhat the origin of that division of the day called Hour. It is a measure of time equal to one twenty-fourth part of the day. It seems that the division of the day into hours must go as far back as

the beginning of the world. It is true, the books of the Kings, those of Daniel, Tobias and Judith are the first to mention the term hour, used by the Ancients who wrote either in Latin or in Greek to signify that part of the day or night in the same sense as we use it in our days.

The Holy Scripture does not mention either clock or dial before the reign of Achaz, A. M. 3262, but since that time, and very probably before, the Hebrews had divided their day into hours: twelve for the day and as many for the night, Mat. xx, 3, 4; John, xi, 9, as far as we can judge by the following texts: IV Kings, xxii, 11, and Isaïas, xxxviii, 8, "and he brought the shadow ten degrees backwards by the lines by which it had already gone down in the Dial of Achaz." Daniel, iv, 16, "Then Daniel, whose name was Baltassar, began silently to think within himself for about one hour." Tobias, xi, 14; xii, 22, "and he stayed about half an hour.....Then they lying prostrate for three hours upon their face, blessed God." Judith, vii, 18, "For many hours with one voice, they cried to God." The difficulty is to ascertain whence comes the use of Dials or Clocks of whatsoever nature they be and who is their inventor? Though, we all know that it is easy to perfect an invention when it is once made. We see them in use among the Jews under the reigns of Achaz (4th Book of Kings) and Manasse (Book of Judith), and a long time after, in Chaldea, beyond the Euphrates (Book of Tobias and Daniel). Now, have we any proof that the invention was new then, either in Judea or in Chaldea when those authors spoke of it? Solomon will answer, Eccl. i, 10; iii, 15, "Nothing under the sun is new: neither is any man able to say: behold, this is new; for it hath already gone before, in the ages that were before us....that which hath been made, the same continueth; the things that shall be, have already been; and God restoreth that which is past." Solomon in his time could not ignore their existence: Wis. vii, 17, 21, "For He hath given me the true knowledge of all things that are, to know the disposition of the whole world and the virtues of the elements, the beginning and ending and midst of the times, the alterations of their courses and the change of seasons, the revolutions of the year and the dispositions of the stars, the nature of living creatures....and all such things as are hid and not foreseen, I have learned."

2. Week designates a period of seven days. Some say this word comes from the old High-German "Wehha," whilst others claim it is merely the translation of the Latin *Septimana* or the Greek *Hebdomas*. Although found as a civil institution among some nations in the earliest time, such as the Hindus, Assyrians, Persians, Babylonians, Egyptians and even the Peruvians (*Histoire du Calendrier par Gebelin*, p. 81), it is only with the Jews that we see a religious signification given to the Seventh day of that period.

Both their cosmogony and legislation are connected with it: Genesis, ii, 2, 3, "God....blessed the Seventh day and sanctified it....and he rested on the Seventh day." Genesis, vii, 4, "After seven days, I will rain upon the earth forty days and forty nights;" viii, 10, 12. "Having waited seven other daysHe staid yet seven other days;" xxix, 27, 28, "Laban answered to Jacob: make up the week of days with this matchafter the week was passed, he married Rachel." (About 260 years before the law of God was promulgated through Moses, 1750 B. C.). Exodus, xxxi, 15, "six days shall you do the work: in the Seventh day, is the Sabbath, the rest holy to the Lord."

We do not know for certain, that it was through the Hebrews, who lived about 240 years in Egypt, including the time of the life of Joseph before Jacob came thither, that this computation of weeks was introduced to the Egyptians and the other nations; but we do know that the Egyptians, at an early period, counted seven periodical days, naming them according to the seven planets then assumed, probably because the star-worship was one of the first forms of Idolatry. But the Hebrews never adopted the names of the planets for the designation of the days of the week. They called them, the first, the second, etc., and the Seventh day they called the Sabbath.

The application of the names of the planets to the days of the week in the order they now stand, originated in this way: it was an astrological notion that each planet, in order, presided over an hour of the day; the order, being according to their distances from the earth, on the geocentric system, Saturn, Jupiter, Mars, the Sun, Venus, Mercury and the Moon. Assuming Saturn to preside over the first hour of Saturday, and assigning to each succeeding hour a planet in order, the first hour of the next day will come to the Sun; the first hour of the third day to the Moon; the first hour of the fourth day, to Mars; the first hour of the fifth day, to Mercury; the first hour of the sixth day, to Jupiter; the first hour of the Seventh day, to Venus, and the first hour of the eighth day, to Saturn again.

Names in Latin.

Dies Solis,
Dies Lunae,
Dies Martis,
Dies Mercurii,
Dies Jovis,
Dies Veneris,
Dies Saturni,

Names in Saxon.

Sun's day,
Moon's day,
Tuisco's day,
Woden's day,
Thor's day,
Friga's day,
Saturn's day,

English.

Sunday.
Monday.
Tuesday.
Wednesday.
Thursday.
Friday.
Saturday.

TIME TABLE.

- 60 seconds make 1 minute.
- 60 minutes make 1 hour.
- 24 hours make 1 day.
- 7 days make 1 week.
- 28, 29, 30, 31 days make 1 calendar month.
- 29 days, 12 hours, 44 minutes, 3 seconds make 1 Synodic or Lunar month (from N. M. to New moon).
- 12 calendar months make 1 year.
- 365 days make 1 common year.
- 366 days make 1 leap-year.
- 365 days, 5 hours, 48 minutes, 49.7 seconds make 1 Solar year.
- 365 days, 6 hours, 9 minutes, 9.6 seconds make 1 Sidereal year.
- 100 years make 1 century.

From recent discoveries of Assyriologists, it seems certain that the Assyrians also observed the Seventh day of the week as a day of rest. To this remarkable people, are also to be traced the planetary names which we still give to the days of the week. It is the opinion of some learned men that the Assyrians, and through them, other nations have derived their week of seven days from the Accadians or early Turanian inhabitants of Babylonia. Let me observe here that, Abraham being chosen by God to be the father of His people and to perpetuate the true traditions as well as the true religion among his descendants, and being from Chaldea himself, it seems natural, that his relatives left there, should have also transmitted the same or at least some of the traditions, which were comparatively fresh then, in the memory of every one. But they were idolaters, and likely they soon forgot the true traditions. Supposing then the case that they were lost, together with the observance of the Sabbath, is it not more probable that it is through the Jews that they were resumed, during the captivity of Babylon which lasted seventy years? For, why should Aman say to the king Assuerus: "There is a people scattered through all the provinces of thy kingdom, and separated one from another, that use new laws and ceremonies." Esther, iii, 8, "Then the king ...made Daniel governor over all the provinces of Babylon and chief of the magistrates over all the wise men of Babylon," Dan. ii, 47, 48, as Pharaoh did in favor of Joseph in his time over the whole of Egypt. VI, 25, 27. "Then King Darius wrote to the people...in the whole earth...It is decreed by me that in all my empire and my kingdom, all men dread and fear the God of Daniel, for He is the living and eternal

God for ever." II Paralipomenon, xxxvi, 20, 21, "Whosoever escaped the sword, was led into Babylon, and there served the king and his sons till the reign of the king of Persia, that the word of the Lord, by the mouth of Jeremias, might be fulfilled, and the land might keep her Sabbaths."

From all this, it is clear that idolatry was not abolished, but the worship of God was also allowed and had the same rights as worship of idols. Certainly, Daniel and his associates in Assyria, as well as Joseph in Egypt, had permission to instruct the people under their care, and by their agency, true traditions and revelations made by God, through the prophets, were transmitted to all nations of the empire and kingdom. It seems only logical, that the Assyrians received their manner of computing time by weeks and their Sabbath from the Jews, as so many monuments recently discovered in Assyria and elsewhere, corroborate the recital of the Bible.

3. Month, in Latin mensis, is Synodic, Sidereal and Civil. In the early ages of the world, when men were chiefly devoted to agricultural pursuits, the phases of the moon must have attracted great attention, and likely from the periodical lunations observed, was derived the period called month. The moon performs her revolution round the earth in twenty-nine days, twelve hours, forty-four minutes and three seconds, from new moon to new moon; this is called a Synodic month. But if it is reckoned from the position of the moon among the stars to her return to the same position, the period is called a Sidereal month, and consists of twenty-seven days, seven hours, forty-three minutes and eleven and one-half seconds. The synodic month forms one of the three natural measures of the lapse of time, and, notwithstanding that its efficiency depends on the state of the atmosphere, it ranks next to the day in importance.

The Civil or Calendar month is fixed by law for ordinary purposes, and consists of a fixed number of days, from twenty-eight to thirty-one, according to the particular month. The Hebrews, until the captivity of Babylon, had no names for the months. They were called the first, second, third, and so on to the twelfth, and they had thirty days each, as we can infer from the first Book of Moses, vii, 7; viii, 3, 4, "Noah with his sons, his wife and the wives of his sons went into the ark and stayed in 150 days before the waters began to be abated," which is called five months:

The Deluge began the 17th day of the 2d month, A. M. 1656.

2d month, the 17th, = 13 days for the remaining part of the month.

3d	"	30	"
4th	"	30	"
5th	"	30	"
6th	"	30	"
7th	"	17	"

--- = 150 days, and the waters began to be abated.
(Lunar months would have given only 147 days.)

7th month to the 27th—10 days, and the ark rested on the mountains of Armenia.		
7th	" to the 30th	3 " and the waters were decreasing till the 10th month.
8th	"	30 "
9th	"	30 — Noah waited yet 73 days to the 10th month.
10th	" the 1st	30 " and the top of the mountains appeared.
11th	" to the 10th	10 "
— = 40 days later, Noah sent forth a raven and a dove, which came back.		
11th	" to the 17th	7 " and he sent again a dove which brought a bough of an olive tree.
11th	" to the 24th	7 " and he sent forth the dove which returned not unto him.
11th	" to the 30th	6 "
12th	"	35 "
— 41 days later the face of the earth was dried.		
1st	"	30 "
2d	" to the 27th	27 "
— = 57 days later God spoke to Noah, saying: Go out of the ark.		
375 — 365 = One year and 10 days in the ark.		

If we give only thirty days to each of the twelve months, the year then consists of 360 days, which cannot be a lunar year of 354 days in twelve lunar months, being six days in excess. It seems evident that the year from the beginning of the world to the time of Moses and even later on, consisted of 365 days. Then, the twelfth month must have had thirty-five days, and a month must have been intercalated after 120 years, in order not to have any considerable change in the seasons. Dom. Aug. Calmet, Dic. of the Bible, T. III, page 674. Scaliger, De Emendatione temporum, L. 3, page 220, etc.

In accordance with that, we will give the Calendar with the ordinal numbers of the months, as they are so designated in the Holy Scripture, from the beginning of the world to its reformation made by Julius Caesar, A. M. 3956, together with the embolismic five days added to the twelfth month and the intercalated one after 120 years, though it is not mentioned anywhere in the Bible. Now, we will see that special mention is made in Holy Scriptures of each one of the twelve months:

1. The 1st month, the 1st day, Gen. viii, 13; Exod. xl, 2; Levit. xxiii, 6; Judith, ii, 1; I Maccabees, vii, 1.

2. The 15th of the 2d month, Gen. vii, 11; Exod. xvi, 1; Numb. i, 1; I Mach. ix, 54.

3. It was the time of the 3d month, Esther, viii, 9; Ezech. xxxi, 1.

4. The 5th day of the 4th month, Jerem. xxxix, 2; Ezech. i, 1.

5. The 1st day of the 5th month, Num. xxxiii, 38; IV Kings, xxv, 8; Esd. vii, 9.

6. The 5th day of the 6th month, Ezech. viii, 1; Aggeus, i, 1; ii, 1.

7. The 27th day of the 7th month, Gen. viii, 4; Num. xxix, 1; I Mach. x, 21.

8. The 15th of the 8th month, III Kings, xii, 33; Zacharias, i, 1.

9. The 4th of the 9th month, Zach. vii, 1; Aggeus, ii, 11; 1 Mach. iv. 52.

10. The 10th of the 10th month, IV Kings, xxv, 1; Jeremias, xxxix, 1.

11. The first of the 11th month, Deuter. i. 3; Zacharias, i. 7.

12. The 27th of the 12th month, IV Kings, xxv, 27; 1 Par. xxvii, 15; Esther, xi, 1.

In the time of Solomon, we find the names of Zio for the second month; Bul, for the eighth, and Ethanin, for the 7th. III Kings, vi, 1, 37; viii, 2. Later and after the captivity of Babylon, we find Adar for the twelfth month, I Esdras, vi, 15; Casleu, the 9th, II Esdras, i, 1; Sabbath, for the eleventh, Zach. i, 7, and Siban for the third, Esther, viii, 9; but the former numerical appellation is prevalent through the whole Bible. The aforesaid names of the months seem to come from the Chaldeans or Babylonians, as they are not mentioned in the Holy Scripture before the captivity of Babylon; but Xanthicus and Dioscorus, II Mach. xi, 21, 33, are from the Macedonians. The opinion of Josephus, however, is that the former comes from the Egyptians: Antiq. of the Jews, B. I. C. 3, No. 3, "This calamity (flood) happened in the 600th year of Noah's government (age) in the second month called by the Macedonians Dios, but by the Hebrews Marshesvan; for so did they order their year in Egypt. But Moses appointed that Nisan, which is the same with Xanthicus, should be the first month of their festivals, because he brought them out of Egypt in that month."

TABLE of the Jewish months in Josephus and others, with the Macedonian names Josephus gives them, together with the names of the Grecian and Roman months corresponding to them.

Assyro-Chaldean or Hebrew names.	No. of Days.	Macedonian Names.	Greek Names.	Roman Names.	No. D. given by J. Cassar.	Under Aug. C. ab. 8 B. C.
1 Nisan*.....	30	Xanthicus.....	Elaphebolion.	April.....	30	30
2 Jyar.....	29	Artemesius.....	Munyehion...	May.....	31	31
3 Sivan or siban...	29	Dæsius.....	Thargellion...	June.....	30	30
4 Thamuz.....	29	Panemus.....	Sciophorion.	July.....	31	31
5 Ab or Abba.....	30	Lous.....	Hecatombeon	August...	30	31
6 Elul.....	29	Gorpiceus.....	Metageitnion.	September	31	30
7 Tizri (civ. yr.)...	30	Hyperberetæus.	Boedromion.	October...	30	31
8 Marshesvan.....	29	Dios.....	Pyanepsion...	November	31	30
9 Casleu.....	30	Appellæus.....	Memacterion.	December	30	31
10 Tebeth.....	29	Audineus.....	Poseideon....	January...	31	31
			Poseideon II.			
11 Sebat or Sabath.	30	Peritius.....	Gamelion.....	February...	29	28
12 Adar.....	29	Dystrus.....	Anthesterion.	March.....	31	31
13 Veadar.....	30					

*These are the names given to the months by the Jews after their return from the captivity of Babylon, A. M. 3489-514 B. C.

The intercalation of Veadar or a II Adar, which had sometimes thirty days, sometimes twenty-nine or less, according to the space of time left between the 29th of Adar and the 1st of Nisan, was regulated by the Sanhedrim, and so that the Pascha or Passover was always celebrated on the day of the full moon falling immediately after the Vernal Equinox: that is the 14th of Nisan.

The II book of Maccabees, xi, 30, mentions thirty days for Xanthicus, but the number of days assigned to the other months is not known.

The Jewish lunar year contained 354 days or twelve lunations; but in a cycle of eight years, an intercalary month was introduced three times, giving an additional month to the third, the fifth and the eighth year, to make its average length nearly correct:

$$\begin{array}{l} 365 \times 6 = 2190 \\ 366 \times 2 = 732 \end{array} \left. \vphantom{\begin{array}{l} 365 \\ 366 \end{array}} \right\} = 2922 \text{ days; } \begin{array}{l} 354 \times 5 = 1770 \\ 384 \times 3 = 1152 \end{array} \left. \vphantom{\begin{array}{l} 354 \\ 384 \end{array}} \right\} = 2922 \text{ days.}$$

But in a period of 152 years or eight Methonic cycles, there are 55,518 days, according to the Jewish calendar (2922×19), whilst there are 55,520, according to that of the Greeks (6940×8).

The Greeks who generally retained the lunar year of 354 days, ordained their Cycle on the same principle; for the Methon's Cycle was invented and adopted about eighty-two years after the return of the Jews from the Babylonish captivity. Ideler gives their calendar for that period as follows:

Years of the Cycle

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Hecatombeon.	30	29	30	30	30	30	29	30	30	30	29	29	30	30	30	29	29	30	30
Metageitmon.	29	30	29	30	30	29	30	29	29	29	30	30	29	29	29	30	30	29	29
Bodromion.	30	29	30	29	29	30	29	30	30	30	29	29	30	30	30	29	29	30	30
Pyanepsion.	29	30	29	30	30	30	30	29	29	30	30	30	29	29	29	30	30	29	30
Memacterion.	30	29	30	29	29	29	29	30	30	29	29	29	30	30	30	29	29	30	29
Poseideon.	29	30	29	30	30	30	30	29	29	30	30	30	29	29	30	30	30	29	30
Poseideon II.	30	29	30	29	29	29	30	30	30	29	30	30	29	29	30	29	29	30	29
Gamelion.	30	30	29	29	30	29	29	29	30	29	29	29	30	30	29	30	29	30	30
Anthesterion.	29	29	30	30	29	30	30	29	29	30	30	30	29	29	30	30	30	29	29
Elaphebolion.	30	30	30	29	30	29	30	29	30	29	29	29	29	29	29	29	29	30	30
Munychion.	29	29	29	30	29	30	29	30	29	30	30	30	30	29	30	30	30	29	29
Thargelion.	30	30	30	29	29	29	30	29	30	29	29	30	29	30	29	29	29	30	30
Scirphorion.	29	29	29	30	30	30	29	30	29	30	30	29	30	29	30	30	30	29	29
No. days in a year.	354	354	384	355	384	355	354	384	354	355	384	354	384	354	355	384	354	354	384

I must remark here that the month called Hecatombeon among the Greeks was their seventh month until 450 B. C.: since that time, it became the first month of the Olympic Calendar. It corresponds to Abba or Ab. Ant. of the Jews, B. 4, C. 4, No. 7.

I give here all these different names of the months used among the most prominent nations of antiquity, as it may prove of interest; but we cannot derive from them anything accurate concerning the computation of time, from the beginning of the world to the reformation of the Calendar by Julius Caesar. Therefore, I insert the months in the numerical order as mentioned in the Bible, with the number of days attributed to each one respectively. I do not pretend to claim it is absolutely exact, for the information given by Scriptures and history is incomplete, leaving no means of ascertaining its accuracy; but it is as nearly exact as one can arrive at, according to the assertions of the ancient authors such as Censorinus in his work "*De Die Natali*;" Dom Calmet: "at a very early age the Egyptians had twelve months and five days, and the king Pison is said to have given that form to their civil year, which consisted of 365 days. They had an intercalary month after 120 years, when the beginning of the year was advanced by thirty days." The *International Cyclopædia* says the same thing: "the Egyptians knew the year of 365 days previous to 1500 B. C., and introduced five intercalary days after the twelfth month (see year) (month).

Maimonides, speaking of the Jews, says that though they had lunar months, they had also solar years. Josephus, in the *Antiquities of the Jews*, B. 3, C. 10, n. 3 and 5, and Philo, in *Vita Moysis*, L. 3, say the same thing. Moses, consequently, having been brought up and educated in Egypt, knew no other year but that of 365 days divided into twelve months.

The Romans, in taking possession of the world, abolished the old method of reckoning by lunar months in the countries under their sway, and compelled the adoption of the Julian Calendar, according to which the year was assumed to contain 365 days and six hours.

The substitution of the Gregorian Calendar in 1582, introduced for the average length of the solar year, 365 days, five hours and forty-nine minutes, differs only by a few seconds from its true value, and is compensated for by the means of a succession of leap-years.

4. Year, is a division of time containing a complete course of the seasons and depends upon the revolution of the earth round the Sun. Its duration was variously determined by the

nations of Antiquity. The earliest method known (exclusive of that given by the Scripture) was to make it include twelve lunar months, forming a year of 354 days. This, though a pretty close approximation to the true value of the year, was yet so incorrect, being defective by more than eleven days, that it was found necessary to intercalate these eleven days, in order to preserve the year in a constant relative position to the seasons. The intercalation was variously effected: thus, the Egyptians who knew the year of 365 days previous to 1500 B. C., divided it into three seasons (winter, summer and the Nile, that is, its inundation) of four months each, gave to each month thirty days and intercalated five other days at the end of the twelfth month. The Greeks who generally retained the lunar year of 354 days, added seven months in the course of every nineteen years, giving an additional month to the third, the fifth, the eighth, the eleventh, the thirteenth, the sixteenth and the nineteenth year of each cycle, or three months in the course of eight years.

The Romans also intercalated additional days, but their system of intercalation was continually changed, not always for the better, till Julius Caesar caused the adoption of the solar year, after having made the proper correction. It is said that the difference between the solar and the civil year was then sixty-seven days. In consequence, they were intercalated between the last day of November and the first of December of the forty-fifth year B. C., making it consist of 461 days. Some have called it the year of confusion, but with our way of reckoning time, it was about the number of days necessary to complete the connection between the old and the new form of the calendar. For, the first month of the year 1 B. C., corresponding then with October, there was an interval of two months left by the change or reformation.

The time at which the year began varied much among the different nations. The Carthaginians, Egyptians, Persians, Syrians and other eastern nations commenced their year at the Autumnal Equinox, at which time the civil year of the Jews also began, though their sacred year was reckoned from the vernal Equinox: "This month shall be to you the beginning of months; it shall be the first in the months of the year." Exodus, xii, 2.

The commencement of the Greek year was at the winter solstice before Methon's time, and was then changed to the summer solstice. The Romans were the first to adopt the first day of January as the first of the year under the reign of Tarquinius Sr. (615-577), Junius apud Censorinum. In France, the commencement was March 1st, under the Mero-

vingians, March 25th, under the Carlovingsians, Easter, under the Capetians, and January 1st, from 1564. The Ecclesiastical year in Europe commenced with the first Sunday in Advent.

CHAPTER II.

HISTORY OF THE ROMAN MONTHS AND THE OLD ROMAN CALENDAR

January, from the Latin word Janus, one of the first kings of the Latium and god of peace, with the Romans (1451-1415 B. C.), is the first month of the year and has thirty-one days. Among the Romans, it was held sacred to Janus, from which it derived its name, and was added to the calendar along with February by Numa. It was not till the eighteenth century that January was universally adopted by the European nations as the first month of the year, although the Romans considered it as such, as far back as about 600 B. C.

February, from the Latin word februaire, to purify, is the second month of the year and has twenty-eight days, but in a leap-year, twenty-nine. It derived its name from the circumstance that, within this month, occurred the Roman festival called februalia. Among the Romans, it had originally twenty-nine days in an ordinary year; but when the senate decreed, in the eighth year B. C. that the eighth month should bear the name of August, a day was taken from February and given to August, which had then only thirty days, that it might not be inferior to July.

March, from Mars-tis, god of war among the Ancients, was formerly the first month of the Roman year. It has thirty-one days.

April, in Latin aprilis, from aperio-ire, to open, to show, is the fourth month of the year and has thirty days. This month was so named by the Romans, because it is the season when the buds begin to open.

May, in Latin maius or majus-or, comparative of magnus, was probably so called, because the buds and flowers are larger in this month than in the former. The first of May, May-day, was the chief festival both in ancient and in modern times. It consists of thirty-one days.

June, from Juno, the Roman Goddess, wife of Jupiter and queen of heaven, to whom it was sacred, is the sixth month of the year and has thirty days.

July, from Julius ii, was called Quintilis, the fifth month in the old Roman calendar and originally contained thirty-six days. It was reduced to thirty-one by Romulus, to thirty by Numa, and restored to thirty-one again by Julius Caesar, in honor of whom it was called July (Julius), on account of his birth-day having occurred the twelfth of this month.

August, in Latin, augustus, holy, venerable, was called sextilis, the sixth month of the old Roman year, when it began with March. It received its present name from the Emperor Augustus, on account of several of the most fortunate events of his life having occurred during this month. By a decree of the senate, a day was taken from February and added to August, making it consist of thirty-one days.

September, from the Latin septem, seven, was the seventh month of the Roman calendar before January and February were added, but it is now the ninth according to our way of reckoning, though we preserve its original name. It contains thirty days.

October, from the Latin octo, eight, the eighth month of the so-called year of Romulus, became the tenth, when, according to tradition, Numa (715-672 B. C.) changed the commencement of the year to the first of January, though it retained its original name and its number of days thirty-one.

November, from the Latin novem, nine, was among the Romans the ninth month of the year at the time when the year consisted of ten months. It contained thirty days. Julius Caesar gave it thirty-one days, but in the reign of Augustus, it was restored to thirty days, which number it has since retained. The similar change was made for September and December: that is, September was given thirty days and December thirty-one.

December, from the Latin decem, ten, was the tenth month when the year began with March, before Julius Caesar; but it is now the twelfth and contains thirty-one days.

We received from the Romans the names of the twelve months with their respective number of days, but not their division.

They divided their months into three parts: I, from the calends to Nones; II, from Nones to Ides; III, from Ides to the Calends of the following month, and counted the days of each period in retrograding or in going backwards. The first day of the month was called Calends, Calendæ, from calare, to call, to proclaim, because on that day, it was customary to proclaim how many days there were before Nones and the days that were to be kept holy during the month. The middle of the month was called Ides, Idus, from the old

Etrurian verb *Iduo*-are, to divide, because that day divides the month into two parts almost equal, and the ninth day before the Ides, Nones, from *Nonus*, the ninth.

The first period for March, May, July and October, was from the first to the seventh day; and for the other months, from the first to the fifth day, called Nones. So, the second day of January was called the fourth day before Nones; the second day of March, the sixth day before Nones, and so on. In the second period, from Nones to Ides, the days were reckoned in the same way: the eighth of March, May, July and October, was called the eighth day before the Ides; the ninth, the seventh day before the Ides, and so on. The sixth of January, February, April, June, August, September, November and December, was called the eighth day before the Ides; the seventh, the seventh day before the Ides, and so on.

In the third period, from the Ides to the Calends of the following month, the 16th of March, May, July and October, was called the seventeenth day before the Calends of the following month; the 14th of January, August and December, was called the nineteenth day before the Calends; for April, June, September and November, it was the eighteenth day; for February, it was the sixteenth day, but in a leap-year, the seventeenth. In former times the order was kept for an ordinary year as well as a leap-year; only the twenty-fourth day, called the sixth before the Calends of March, was repeated: *Bissextus calendas martii*. Hence the *Bissextile* year.

Another strange way of the Romans was to count as past the day from which they began to reckon. So, the second day before Nones was called the third day, and the second as well as the first day were never mentioned; but they used instead, the word *pridies* in the ablative case, "*Pridie*," the eve or the day before. Consequently, the Calends, Nones and Ides were counted for the first day of their period respectively.

Roman Calendar

March, May, July, October, 31 days.	January, August, December, 31 days.	April, June, September, November, 30 days.	February, 28 days and every 4th year 29 days.
D. M.			
1 Kalendis.	Kalendis.	Kalendis.	Kalendis.
2 VI } 3 V } ante 4 IV } Nonas.	IV } ante III } Nonas Pridie Nonas.	IV } ante III } Nonas Pridie Nonas.	IV } ante No- III } nas, before Pridie Nonas.
5 III }	Nonis.	Nonis.	the day before Nonas. Nonis.
6 Pridie Nonas	VIII }	VIII }	VIII }
7 Nonis.	VII }	VII }	VII }
8 VIII }	VI } ante	VI } ante	VI } ante Idus,
9 VII }	V } Idus.	V } Idus.	V } before the
10 VI }	IV }	IV }	IV } Ides.
11 V }	III }	III }	III }
12 IV }	Pridie Idus	Pridie Idus.	Pridie Idus, the
13 III }			day before the Ides.
	Idibus	Idibus.	Idibus. Ann Biss.
14 Pridie Idus.	XIX }	XVIII }	L. Yr.
15 Idibus.	XVIII }	XVII }	XVI XVII }
16 XVII }	XVII }	XVI }	XV XVI }
17 XVI }	XVI }	XV }	XIV XV }
18 XV }	XV }	XIV }	XIII XIV }
19 XVI }	XIV }	XIII }	XII XIII }
20 XIII }	XIII }	XII }	XI XII }
21 XII }	XII }	XI }	X XI }
22 XI }	XI }	X }	IX X }
23 X }	X }	IX }	VIII IX }
24 IX }	IX }	VIII }	VII VIII }
25 VIII }	VIII }	VII }	VI VII }
26 VII }	VII }	VI }	V VI }
27 VI }	VI }	V }	IV V }
28 V }	V }	IV }	III IV }
29 IV }	IV }	III }	Pr. Kal. III }
30 III }	III }	Pridie Kalen.	Pr. Kalendas Mar-
31 Pridie Kal. mensis seq.	Pridie Kal. mensis seq.	tis. sis sequen-	tias. The day be-
			fore the Calends of March.

The ancient northern nations reckoned their year from the winter solstice: the Russians, till Peter the Great's time, from September 1st, and the same reckoning known as the Byzantine era, was in use in the eastern empire.

In astronomy there are several kinds of years depending upon the various configurations of the earth in its orbit, and con-

sequently varying in length. First, there is the tropical (or as it is sometimes incorrectly called solar year) which, from its being recognized in legislation and history, and commonly applied in the measure of time, has also received the name of Civil year. This year is defined as the time which elapses from the sun's appearance on one of the tropics to its return to the same, and has a mean length of 365.2422414 mean solar days, or 365 days, five hours, forty-eight minutes and 49.7 seconds. Next is the sidereal year, which is the period required by the sun to move from a given star to the same star again, and this year, affected as it is by nutation only, is one of the most invariable quantities which nature presents us with, and has a mean value of 365.2563612 mean solar days, or 365 days, six hours, nine minutes and 9.6 seconds. Or to give a shorter definition, it is the interval of a complete revolution of the earth about the sun measured by a fixed star. The time which elapses between the earth's arrival at its perihelion and its return to the same position, is known as the Anomalistic year, and is equivalent to 365.2595981 mean solar days, or 365 days, 6 hours, 13 minutes and 49.3 seconds. The Sidereal and the Anomalistic years have a merely astronomical importance (The Int. Cyclopædia).

Perpetual Calendar

For the period elapsed from the year 1st to the 3956th A. M.

SUNDAY-SUNDAY

FIRST MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

SECOND MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

THIRD MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*

FOURTH MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

FIFTH MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*
*	*	*	*	*	*	*

SIXTH MONTH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*
*	*	*	*	*	*	*

SUNDAY-SUNDAY

SEVENTH MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

EIGHTH MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

NINTH MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

TENTH MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*
*	*	*	*	*	*	*

ELEVENTH MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

TWELFTH MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	32	33	34
35	*	*	*	*	*	*

Perpetual Calendar

For the period elapsed from the year 1st to the 3956th A. M.

MONDAY-MONDAY

FIRST MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*
*	*	*	*	*	*	*

SECOND MONTH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

THIRD MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

FOURTH MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

FIFTH MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

SIXTH MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*
*	*	*	*	*	*	*

MONDAY-MONDAY

SEVENTH MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

EIGHTH MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*

NINTH MONTH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

TENTH MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

ELEVENTH MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

TWELFTH MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	32	33
34	35	*	*	*	*	*

Perpetual Calendar

For the period elapsed from the year 1st to the 3956th A. M.

TUESDAY-TUESDAY

FIRST MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

SECOND MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*

THIRD MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

FOURTH MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*
*	*	*	*	*	*	*

FIFTH MONTH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

SIXTH MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
*	*	*	*	*	*	*

TUESDAY-TUESDAY

SEVENTH MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

EIGHTH MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

NINTH MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*
*	*	*	*	*	*	*

TENTH MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

ELEVENTH MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*

TWELFTH MONTH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	32
33	34	35	*	*	*	*

Perpetual Calendar

For the period elapsed from the year 1st to the 3956th A. M.

WEDNESDAY-WEDNESDAY WEDNESDAY-WEDNESDAY

FIRST MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

SECOND MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

THIRD MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

FOURTH MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

FIFTH MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*

SIXTH MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

SEVENTH MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*

EIGHTH MONTH.

*	*	*	1	2	3	*
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

NINTH MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

TENTH MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

ELEVENTH MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

TWELFTH MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
32	33	34	35	*	*	*

Perpetual Calendar

For the period elapsed from the year 1st to the 3956th A. M.

THURSDAY-THURSDAY

FIRST MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
26	26	27	28	29	30	*

SECOND MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

THIRD MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*
*	*	*	*	*	*	*

FOURTH MONTH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

FIFTH MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

SIXTH MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*
*	*	*	*	*	*	*

THURSDAY-THURSDAY

SEVENTH MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

EIGHTH MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*
*	*	*	*	*	*	*

NINTH MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

TENTH MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*

ELEVENTH MONTH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

TWELFTH MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	32	33	34	35	*	*

Perpetual Calendar

For the period elapsed from the year 1st to the 3956th A. M.

FRIDAY-FRIDAY

FIRST MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

SECOND MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

THIRD MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

FOURTH MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*

FIFTH MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

SIXTH MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*
*	*	*	*	*	*	*

FRIDAY-FRIDAY

SEVENTH MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

EIGHTH MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

NINTH MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

TENTH MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

ELEVENTH MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*
*	*	*	*	*	*	*

TWELFTH MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	32	33	34	35	*

Perpetual Calendar — (Continued)

According to Usher's Chron. placing the birth of Christ at 4,004. The 67 days added by Julius Caesar to restore the vernal equinox to the 24th of March.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	32	33	34	35	36
37	38	39	40	41	42	43
44	45	46	47	48	49	50
51	52	53	54	55	56	57
58	59	60	61	62	63	64
65	66	67	*	*	*	*

The ordinary intercalary month
for the period of 120 years.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

Perpetual Calendar

For the period elapsed from the year 1st to the 3956th A. M.

SATURDAY-SATURDAY

FIRST MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

SECOND MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*
*	*	*	*	*	*	*

THIRD MONTH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

FOURTH MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

FIFTH MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

SIXTH MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

SATURDAY-SATURDAY

SEVENTH MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*
*	*	*	*	*	*	*

EIGHTH MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

NINTH MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*

TENTH MONTH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

ELEVENTH MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

TWELFTH MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	32	33	34	35

Perpetual Calendar

For the period elapsed from the year 1st to the 3956th A. M.

SUNDAY-TUESDAY

FIRST MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

SECOND MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

THIRD MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*

FOURTH MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

FIFTH MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*
*	*	*	*	*	*	*

SIXTH MONTH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*
*	*	*	*	*	*	*

SUNDAY-TUESDAY

SEVENTH MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

EIGHTH MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

NINTH MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

TENTH MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*
*	*	*	*	*	*	*

ELEVENTH MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

TWELFTH MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	32	33	34
35	*	*	*	*	*	*

INTERCALARY MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*



Perpetual Calendar

For the period elapsed from the year 1st to the 3956th A. M.

MONDAY-WEDNESDAY

FIRST MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*
*	*	*	*	*	*	*

SECOND MONTH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

THIRD MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

FOURTH MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

FIFTH MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

SIXTH MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*
*	*	*	*	*	*	*

MONDAY-WEDNESDAY

SEVENTH MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

EIGHTH MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*

NINTH MONTH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

TENTH MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

ELEVENTH MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

TWELFTH MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	32	33
34	35	*	*	*	*	*

INTERCALARY MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*



Perpetual Calendar

For the period elapsed from the year 1st to the 3956th A. M.

TUESDAY-THURSDAY

FIRST MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

SECOND MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*

THIRD MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

FOURTH MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*
*	*	*	*	*	*	*

FIFTH MONTH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

SIXTH MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
*	*	*	*	*	*	*

TUESDAY-THURSDAY

SEVENTH MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

EIGHTH MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

NINTH MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*
*	*	*	*	*	*	*

TENTH MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

ELEVENTH MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*

TWELFTH MONTH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	32
33	34	35	*	*	*	*

INTERCALARY MONTH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*



Perpetual Calendar

For the period elapsed from the year 1st to the 3956th A. M.

WEDNESDAY-FRIDAY

FIRST MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

SECOND MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

THIRD MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

FOURTH MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

FIFTH MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*

SIXTH MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

WEDNESDAY-FRIDAY

SEVENTH MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*

EIGHTH MONTH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

NINTH MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

TENTH MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

ELEVENTH MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

TWELFTH MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
32	33	34	35	*	*	*

INTERCALARY MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*



Perpetual Calendar

For the period elapsed from the year 1st to the 3956th A. M.

THURSDAY-SATURDAY

FIRST MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*

SECOND MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

THIRD MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*
*	*	*	*	*	*	*

FOURTH MONTH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

FIFTH MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

SIXTH MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*
*	*	*	*	*	*	*

THURSDAY-SATURDAY

SEVENTH MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

EIGHTH MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*
*	*	*	*	*	*	*

NINTH MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

TENTH MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*

ELEVENTH MONTH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

TWELFTH MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	32	33	34	35	*	*

INTERCALARY MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30



Perpetual Calendar

For the period elapsed from the year 1st to the 3956th A. M.

FRIDAY-SUNDAY

FIRST MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

SECOND MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

THIRD MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

FOURTH MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*

FIFTH MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

SIXTH MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*
*	*	*	*	*	*	*



FRIDAY-SUNDAY

SEVENTH MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

EIGHTH MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

NINTH MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

TENTH MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

ELEVENTH MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*
*	*	*	*	*	*	*

TWELFTH MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	32	33	34	35	*

INTERCALARY MONTH.

*	*	*	*	*	*	1
23	24	25	26	27	28	29
16	17	18	19	20	21	22
9	10	11	12	13	14	15
2	3	4	5	6	7	8
30	*	*	*	*	*	*

Perpetual Calendar

For the period elapsed from the year 1st to the 3956th A. M.

SATURDAY-MONDAY

FIRST MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

SECOND MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*
*	*	*	*	*	*	*

THIRD MONTH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

FOURTH MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

FIFTH MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

SIXTH MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

SATURDAY-MONDAY

SEVENTH MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*
*	*	*	*	*	*	*

EIGHTH MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

NINTH MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*

TENTH MONTH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

ELEVENTH MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

TWELFTH MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	32	33	34	35

INTERCALARY MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*



Calendar for the Year 3956 A. M.

MONDAY-SATURDAY

FIRST MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*

SECOND MONTH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

THIRD MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

FOURTH MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

FIFTH MONTH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

SIXTH MONTH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*

SEVENTH MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

EIGHTH MONTH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*

MONDAY-SATURDAY

NINTH MONTH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

TENTH MONTH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

ELEVENTH MONTH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

67 days added by Julius Caesar, in order to restore the vernal equinox to the 24th of March, the place it occupied in the time of Numa. Roman annals, by M. P. Macquer. Page 429.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	32	33
34	35	36	37	38	39	40
41	42	43	44	45	46	47
48	49	50	51	52	53	54
55	56	57	58	59	60	61
62	63	64	65	66	67	*

TWELFTH MONTH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	32	33	34	35	*
INTERCALARY MONTH.						
*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

Table

Indicating the day on which each year began and ended.

From the year 1st to the 3956th A. M.

Su	1	Fr	41	We	81	We	121	Mo	161	Sa	201
Mo	2	Sa	42	Th	82	Th	122	Tu	162	Su	202
Tu	3	Su	43	Fr	83	Fr	123	We	163	Mo	203
We	4	Mo	44	Sa	84	Sa	124	Th	164	Tu	204
Th	5	Tu	45	Su	85	Su	125	Fr	165	We	205
Fr	6	We	46	Mo	86	Mo	126	Sa	166	Th	206
Sa	7	Th	47	Tu	87	Tu	127	Su	167	Fr	207
Su	8	Fr	48	We	88	We	128	Mo	168	Sa	208
Mo	9	Sa	49	Th	89	Th	129	Tu	169	Su	209
Tu	10	Su	50	Fr	90	Fr	130	We	170	Mo	210
We	11	Mo	51	Sa	91	Sa	131	Th	171	Tu	211
Th	12	Tu	52	Su	92	Su	132	Fr	172	We	212
Fr	13	We	53	Mo	93	Mo	133	Sa	173	Th	213
Sa	14	Th	54	Tu	94	Tu	134	Su	174	Fr	214
Su	15	Fr	55	We	95	We	135	Mo	175	Sa	215
Mo	16	Sa	56	Th	96	Th	136	Tu	176	Su	216
Tu	17	Su	57	Fr	97	Fr	137	We	177	Mo	217
We	18	Mo	58	Sa	98	Sa	138	Th	178	Tu	218
Th	19	Tu	59	Su	99	Su	139	Fr	179	We	219
Fr	20	We	60	Mo	100	Mo	140	Sa	180	Th	220
Sa	21	Th	61	Tu	101	Tu	141	Su	181	Fr	221
Su	22	Fr	62	We	102	We	142	Mo	182	Sa	222
Mo	23	Sa	63	Th	103	Th	143	Tu	183	Su	223
Tu	24	Su	64	Fr	104	Fr	144	We	184	Mo	224
We	25	Mo	65	Sa	105	Sa	145	Th	185	Tu	225
Th	26	Tu	66	Su	106	Su	146	Fr	186	We	226
Fr	27	We	67	Mo	107	Mo	147	Sa	187	Th	227
Sa	28	Th	68	Tu	108	Tu	148	Su	188	Fr	228
Su	29	Fr	69	We	109	We	149	Mo	189	Sa	229
Mo	30	Sa	70	Th	110	Th	150	Tu	190	Su	230
Tu	31	Su	71	Fr	111	Fr	151	We	191	Mo	231
We	32	Mo	72	Sa	112	Sa	152	Th	192	Tu	232
Th	33	Tu	73	Su	113	Su	153	Fr	193	We	233
Fr	34	We	74	Mo	114	Mo	154	Sa	194	Th	234
Sa	35	Th	75	Tu	115	Tu	155	Su	195	Fr	235
Su	36	Fr	76	We	116	We	156	Mo	196	Sa	236
Mo	37	Sa	77	Th	117	Th	157	Tu	197	Su	237
Tu	38	Su	78	Fr	118	Fr	158	We	198	Mo	238
We	39	Mo	79	Sa	119	Sa	159	Th	199	Tu	239
Th	40	Tu	80	Su	120	Tu	160	Fr	200	We	240

Table

Indicating the day on which each year began and ended.

From the year 1st to the 3956th A. M.

Sa 241	Th 281	Tu 321	Tu 361	Su 401	Fr 441
Su 242	Fr 282	We 322	We 362	Mo 402	Sa 442
Mo 243	Sa 283	Th 323	Th 363	Tu 403	Su 443
Tu 244	Su 284	Fr 324	Fr 364	We 404	Mo 444
We 245	Mo 285	Sa 325	Sa 365	Th 405	Tu 445
Th 246	Tu 286	Su 326	Su 366	Fr 406	We 446
Fr 247	We 287	Mo 327	Mo 367	Sa 407	Th 447
Sa 248	Th 288	Tu 328	Tu 368	Su 408	Fr 448
Su 249	Fr 289	We 329	We 369	Mo 409	Sa 449
Mo 250	Sa 290	Th 330	Th 370	Tu 410	Su 450
Tu 251	Su 291	Fr 331	Fr 371	We 411	Mo 451
We 252	Mo 292	Sa 332	Sa 372	Th 412	Tu 452
Th 253	Tu 293	Su 333	Su 373	Fr 413	We 453
Fr 254	We 294	Mo 334	Mo 374	Sa 414	Th 454
Sa 255	Th 295	Tu 335	Tu 375	Su 415	Fr 455
Su 256	Fr 296	We 336	We 376	Mo 416	Sa 456
Mo 257	Sa 297	Th 337	Th 377	Tu 417	Su 457
Tu 258	Su 298	Fr 338	Fr 378	We 418	Mo 458
We 259	Mo 299	Sa 339	Sa 379	Th 419	Tu 459
Th 260	Tu 300	Su 340	Su 380	Fr 420	We 460
Fr 261	We 301	Mo 341	Mo 381	Sa 421	Th 461
Sa 262	Th 302	Tu 342	Tu 382	Su 422	Fr 462
Su 263	Fr 303	We 343	We 383	Mo 423	Sa 463
Mo 264	Sa 304	Th 344	Th 384	Tu 424	Su 464
Tu 265	Su 305	Fr 345	Fr 385	We 425	Mo 465
We 266	Mo 306	Sa 346	Sa 386	Th 426	Tu 466
Th 267	Tu 307	Su 347	Su 387	Fr 427	We 467
Fr 268	We 308	Mo 348	Mo 388	Sa 428	Th 468
Sa 269	Th 309	Tu 349	Tu 389	Su 429	Fr 469
Su 270	Fr 310	We 350	We 390	Mo 430	Sa 470
Mo 271	Sa 311	Th 351	Th 391	Tu 431	Su 471
Tu 272	Su 312	Fr 352	Fr 392	We 432	Mo 472
We 273	Mo 313	Sa 353	Sa 393	Th 433	Tu 473
Th 274	Tu 314	Su 354	Su 394	Fr 434	We 474
Fr 275	We 315	Mo 355	Mo 395	Sa 435	Th 475
Sa 276	Th 316	Tu 356	Tu 396	Su 436	Fr 476
Su 277	Fr 317	We 357	We 397	Mo 437	Sa 477
Mo 278	Sa 318	Th 358	Th 398	Tu 438	Su 478
Tu 279	Su 319	Fr 359	Fr 399	We 439	Mo 479
We 280	Mo 320	Sa 360	Sa 400	Th 440	Tu 480

Table

Indicating the day on which each year began and ended.

From the year 1st to the 3956th A. M.

Fr 481	We 521	Mo 561	Mo 601	Sa 641	Th 681
Sa 482	Th 522	Tu 562	Tu 602	Su 642	Fr 682
Su 483	Fr 523	We 563	We 603	Mo 643	Sa 683
Mo 484	Sa 524	Th 564	Th 604	Tu 644	Su 684
Tu 485	Su 525	Fr 565	Fr 605	We 645	Mo 685
We 486	Mo 526	Sa 566	Sa 606	Th 646	Tu 686
Th 487	Tu 527	Su 567	Su 607	Fr 647	We 687
Fr 488	We 528	Mo 568	Mo 608	Sa 648	Th 688
Sa 489	Th 529	Tu 569	Tu 609	Su 649	Fr 689
Su 490	Fr 530	We 570	We 610	Mo 650	Sa 690
Mo 491	Sa 531	Th 571	Th 611	Tu 651	Su 691
Tu 492	Su 532	Fr 572	Fr 612	We 652	Mo 692
We 493	Mo 533	Sa 573	Sa 613	Th 653	Tu 693
Th 494	Tu 534	Su 574	Su 614	Fr 654	We 694
Fr 495	We 535	Mo 575	Mo 615	Sa 655	Th 695
Sa 496	Th 536	Tu 576	Tu 616	Su 656	Fr 696
Su 497	Fr 537	We 577	We 617	Mo 657	Sa 697
Mo 498	Sa 538	Th 578	Th 618	Tu 658	Su 698
Tu 499	Su 539	Fr 579	Fr 619	We 659	Mo 699
We 500	Mo 540	Sa 580	Sa 620	Th 660	Tu 700
Th 501	Tu 541	Su 581	Su 621	Fr 661	We 701
Fr 502	We 542	Mo 582	Mo 622	Sa 662	Th 702
Sa 503	Th 543	Tu 583	Tu 623	Su 663	Fr 703
Su 504	Fr 544	We 584	We 624	Mo 664	Sa 704
Mo 505	Sa 545	Th 585	Th 625	Tu 665	Su 705
Tu 506	Su 546	Fr 586	Fr 626	We 666	Mo 706
We 507	Mo 547	Sa 587	Sa 627	Th 667	Tu 707
Th 508	Tu 548	Su 588	Su 628	Fr 668	We 708
Fr 509	We 549	Mo 589	Mo 629	Sa 669	Th 709
Sa 510	Th 550	Tu 590	Tu 630	Su 670	Fr 710
Su 511	Fr 551	We 591	We 631	Mo 671	Sa 711
Mo 512	Sa 552	Th 592	Th 632	Tu 672	Su 712
Tu 513	Su 553	Fr 593	Fr 633	We 673	Mo 713
We 514	Mo 554	Sa 594	Sa 634	Th 674	Tu 714
Th 515	Tu 555	Su 595	Su 635	Fr 675	We 715
Fr 516	We 556	Mo 596	Mo 636	Sa 676	Th 716
Sa 517	Th 557	Tu 597	Tu 637	Su 677	Fr 717
Su 518	Fr 558	We 598	We 638	Mo 678	Sa 718
Mo 519	Sa 559	Th 599	Th 639	Tu 679	Su 719
Tu 520	Su 560	Fr 600	Fr 640	We 680	Mo 720

Table

Indicating the day on which each year began and ended.

From the year 1st to the 3956th A. M.

Th 721	Tu 761	Su 801	Su 841	Fr 881	We 921
Fr 722	We 762	Mo 802	Mo 842	Sa 882	Th 922
Sa 723	Th 763	Tu 803	Tu 843	Su 883	Fr 923
Su 724	Fr 764	We 804	We 844	Mo 884	Sa 924
Mo 725	Sa 765	Th 805	Th 845	Tu 885	Su 925
Tu 726	Su 766	Fr 806	Fr 846	We 886	Mo 926
We 727	Mo 767	Sa 807	Sa 847	Th 887	Tu 927
Th 728	Tu 768	Su 808	Su 848	Fr 888	We 928
Fr 729	We 769	Mo 809	Mo 849	Sa 889	Th 929
Sa 730	Th 770	Tu 810	Tu 850	Su 890	Fr 930
Su 731	Fr 771	We 811	We 851	Mo 891	Sa 931
Mo 732	Sa 772	Th 812	Th 852	Tu 892	Su 932
Tu 733	Su 773	Fr 813	Fr 853	We 893	Mo 933
We 734	Mo 774	Sa 814	Sa 854	Th 894	Tu 934
Th 735	Tu 775	Su 815	Su 855	Fr 895	We 935
Fr 736	We 776	Mo 816	Mo 856	Sa 896	Th 936
Sa 737	Th 777	Tu 817	Tu 857	Su 897	Fr 937
Su 738	Fr 778	We 818	We 858	Mo 898	Sa 938
Mo 739	Sa 779	Th 819	Th 859	Tu 899	Su 939
Tu 740	Su 780	Fr 820	Fr 860	We 900	Mo 940
We 741	Mo 781	Sa 821	Sa 861	Th 901	Tu 941
Th 742	Tu 782	Su 822	Su 862	Fr 902	We 942
Fr 743	We 783	Mo 823	Mo 863	Sa 903	Th 943
Sa 744	Th 784	Tu 824	Tu 864	Su 904	Fr 944
Su 745	Fr 785	We 825	We 865	Mo 905	Sa 945
Mo 746	Sa 786	Th 826	Th 866	Tu 906	Su 946
Tu 747	Su 787	Fr 827	Fr 867	We 907	Mo 947
We 748	Mo 788	Sa 828	Sa 868	Th 908	Tu 948
Th 749	Tu 789	Su 829	Su 869	Fr 909	We 949
Fr 750	We 790	Mo 830	Mo 870	Sa 910	Th 950
Sa 751	Th 791	Tu 831	Tu 871	Su 911	Fr 951
Su 752	Fr 792	We 832	We 872	Mo 912	Sa 952
Mo 753	Sa 793	Th 833	Th 873	Tu 913	Su 953
Tu 754	Su 794	Fr 834	Fr 874	We 914	Mo 954
We 755	Mo 795	Sa 835	Sa 875	Th 915	Tu 955
Th 756	Tu 796	Su 836	Su 876	Fr 916	We 956
Fr 757	We 797	Mo 837	Mo 877	Sa 917	Th 957
Sa 758	Th 798	Tu 838	Tu 878	Su 918	Fr 958
Su 759	Fr 799	We 839	We 879	Mo 919	Sa 959
Mo 760	Sa 800	Th 840Sa	Th 880	Tu 920	Su 960Tu

Tables

Indicating the day on which each year began and ended.

From the year 1st to the 3956th A. M.

We	961	Mo	1001	Sa	1041	Sa	1081	Th	1121	Tu	1161
Th	962	Tu	1002	Su	1042	Su	1082	Fr	1122	We	1162
Fr	963	We	1003	Mo	1043	Mo	1083	Sa	1123	Th	1163
Sa	964	Th	1004	Tu	1044	Tu	1084	Su	1124	Fr	1164
Su	965	Fr	1005	We	1045	We	1085	Mo	1125	Sa	1165
Mo	966	Sa	1006	Th	1046	Th	1086	Tu	1126	Su	1166
Tu	967	Su	1007	Fr	1047	Fr	1087	We	1127	Mo	1167
We	968	Mo	1008	Sa	1048	Sa	1088	Th	1128	Tu	1168
Th	969	Tu	1009	Su	1049	Su	1089	Fr	1129	We	1169
Fr	970	We	1010	Mo	1050	Mo	1090	Sa	1130	Th	1170
Sa	971	Th	1011	Tu	1051	Tu	1091	Su	1131	Fr	1171
Su	972	Fr	1012	We	1052	We	1092	Mo	1132	Sa	1172
Mo	973	Sa	1013	Th	1053	Th	1093	Tu	1133	Su	1173
Tu	974	Su	1014	Fr	1054	Fr	1094	We	1134	Mo	1174
We	975	Mo	1015	Sa	1055	Sa	1095	Th	1135	Tu	1175
Th	976	Tu	1016	Su	1056	Su	1096	Fr	1136	We	1176
Fr	977	We	1017	Mo	1057	Mo	1097	Sa	1137	Th	1177
Sa	978	Th	1018	Tu	1058	Tu	1098	Su	1138	Fr	1178
Su	979	Fr	1019	We	1059	We	1099	Mo	1139	Sa	1179
Mo	980	Sa	1020	Th	1060	Th	1100	Tu	1140	Su	1180
Tu	981	Su	1021	Fr	1061	Fr	1101	We	1141	Mo	1181
We	982	Mo	1022	Sa	1062	Sa	1102	Th	1142	Tu	1182
Th	983	Tu	1023	Su	1063	Su	1103	Fr	1143	We	1183
Fr	984	We	1024	Mo	1064	Mo	1104	Sa	1144	Th	1184
Sa	985	Th	1025	Tu	1065	Tu	1105	Su	1145	Fr	1185
Su	986	Fr	1026	We	1066	We	1106	Mo	1146	Sa	1186
Mo	987	Sa	1027	Th	1067	Th	1107	Tu	1147	Su	1187
Tu	988	Su	1028	Fr	1068	Fr	1108	We	1148	Mo	1188
We	989	Mo	1029	Sa	1069	Sa	1109	Th	1149	Tu	1189
Th	990	Tu	1030	Su	1070	Su	1110	Fr	1150	We	1190
Fr	991	We	1031	Mo	1071	Mo	1111	Sa	1151	Th	1191
Sa	992	Th	1032	Tu	1072	Tu	1112	Su	1152	Fr	1192
Su	993	Fr	1033	We	1073	We	1113	Mo	1153	Sa	1193
Mo	994	Sa	1034	Th	1074	Th	1114	Tu	1154	Su	1194
Tu	995	Su	1035	Fr	1075	Fr	1115	We	1155	Mo	1195
We	996	Mo	1036	Sa	1076	Sa	1116	Th	1156	Tu	1196
Th	997	Tu	1037	Su	1077	Su	1117	Fr	1157	We	1197
Fr	998	We	1038	Mo	1078	Mo	1118	Sa	1158	Th	1198
Sa	999	Th	1039	Tu	1079	Tu	1119	Su	1159	Fr	1199
Su	1000	Fr	1040	We	1080	We	1120	Mo	1160	Sa	1200

Tables

Indicating the day on which each year began and ended.

From the year 1st to the 3956th A. M.

Tu 1201	Su 1241	Fr 1281	Fr 1321	We 1361	Mo 1401
We 1202	Mo 1242	Sa 1282	Sa 1322	Th 1362	Tu 1402
Th 1203	Tu 1243	Su 1283	Su 1323	Fr 1363	We 1403
Fr 1204	We 1244	Mo 1284	Mo 1324	Sa 1364	Th 1404
Sa 1205	Th 1245	Tu 1285	Tu 1325	Su 1365	Fr 1405
Su 1206	Fr 1246	We 1286	We 1326	Mo 1366	Sa 1406
Mo 1207	Sa 1247	Th 1287	Th 1327	Tu 1367	Su 1407
Tu 1208	Su 1248	Fr 1288	Fr 1328	We 1368	Mo 1408
We 1209	Mo 1249	Sa 1289	Sa 1329	Th 1369	Tu 1409
Th 1210	Tu 1250	Su 1290	Su 1330	Fr 1370	We 1410
Fr 1211	We 1251	Mo 1291	Mo 1331	Sa 1371	Th 1411
Sa 1212	Th 1252	Tu 1292	Tu 1332	Su 1372	Fr 1412
Su 1213	Fr 1253	We 1293	We 1333	Mo 1373	Sa 1413
Mo 1214	Sa 1254	Th 1294	Th 1334	Tu 1374	Su 1414
Tu 1215	Su 1255	Fr 1295	Fr 1335	We 1375	Mo 1415
We 1216	Mo 1256	Sa 1296	Sa 1336	Th 1376	Tu 1416
Th 1217	Tu 1257	Su 1297	Su 1337	Fr 1377	We 1417
Fr 1218	We 1258	Mo 1298	Mo 1338	Sa 1378	Th 1418
Sa 1219	Th 1259	Tu 1299	Tu 1339	Su 1379	Fr 1419
Su 1220	Fr 1260	We 1300	We 1340	Mo 1380	Sa 1420
Mo 1221	Sa 1261	Th 1301	Th 1341	Tu 1381	Su 1421
Tu 1222	Su 1262	Fr 1302	Fr 1342	We 1382	Mo 1422
We 1223	Mo 1263	Sa 1303	Sa 1343	Th 1383	Tu 1423
Th 1224	Tu 1264	Su 1304	Su 1344	Fr 1384	We 1424
Fr 1225	We 1265	Mo 1305	Mo 1345	Sa 1385	Th 1425
Sa 1226	Th 1266	Tu 1306	Tu 1346	Su 1386	Fr 1426
Su 1227	Fr 1267	We 1307	We 1347	Mo 1387	Sa 1427
Mo 1228	Sa 1268	Th 1308	Th 1348	Tu 1388	Su 1428
Tu 1229	Su 1269	Fr 1309	Fr 1349	We 1389	Mo 1429
We 1230	Mo 1270	Sa 1310	Sa 1350	Th 1390	Tu 1430
Th 1231	Tu 1271	Su 1311	Su 1351	Fr 1391	We 1431
Fr 1232	We 1272	Mo 1312	Mo 1352	Sa 1392	Th 1432
Sa 1233	Th 1273	Tu 1313	Tu 1353	Su 1393	Fr 1433
Su 1234	Fr 1274	We 1314	We 1354	Mo 1394	Sa 1434
Mo 1235	Sa 1275	Th 1315	Th 1355	Tu 1395	Su 1435
Tu 1236	Su 1276	Fr 1316	Fr 1356	We 1396	Mo 1436
We 1237	Mo 1277	Sa 1317	Sa 1357	Th 1397	Tu 1437
Th 1238	Tu 1278	Su 1318	Su 1358	Fr 1398	We 1438
Fr 1239	We 1279	Mo 1319	Mo 1359	Sa 1399	Th 1439
Sa 1240	Th 1280	Tu 1320	Th Tu 1360	Su 1400	Fr 1440 Su

Tables

Indicating the day on which each year began and ended.

From the year 1st to the 3956th A. M.

Mo 1441	Sa 1481	Th 1521	Th 1561	Tu 1601	Su 1641
Tu 1442	Su 1482	Fr 1522	Fr 1562	We 1602	Mo 1642
We 1443	Mo 1483	Sa 1523	Sa 1563	Th 1603	Tu 1643
Th 1444	Tu 1484	Su 1524	Su 1564	Fr 1604	We 1644
Fr 1445	We 1485	Mo 1525	Mo 1565	Sa 1605	Th 1645
Sa 1446	Th 1486	Tu 1526	Tu 1566	Su 1606	Fr 1646
Su 1447	Fr 1487	We 1527	We 1567	Mo 1607	Sa 1647
Mo 1448	Sa 1488	Th 1528	Th 1568	Tu 1608	Su 1648
Tu 1449	Su 1489	Fr 1529	Fr 1569	We 1609	Mo 1649
We 1450	Mo 1490	Sa 1530	Sa 1570	Th 1610	Tu 1650
Th 1451	Tu 1491	Su 1531	Su 1571	Fr 1611	We 1651
Fr 1452	We 1492	Mo 1532	Mo 1572	Sa 1612	Th 1652
Sa 1453	Th 1493	Tu 1533	Tu 1573	Su 1613	Fr 1653
Su 1454	Fr 1494	We 1534	We 1574	Mo 1614	Sa 1654
Mo 1455	Sa 1495	Th 1535	Th 1575	Tu 1615	Su 1655
Tu 1456	Su 1496	Fr 1536	Fr 1576	We 1616	Mo 1656
We 1457	Mo 1497	Sa 1537	Sa 1577	Th 1617	Tu 1657
Th 1458	Tu 1498	Su 1538	Su 1578	Fr 1618	We 1658
Fr 1459	We 1499	Mo 1539	Mo 1579	Sa 1619	Th 1659
Sa 1460	Th 1500	Tu 1540	Tu 1580	Su 1620	Fr 1660
Su 1461	Fr 1501	We 1541	We 1581	Mo 1621	Sa 1661
Mo 1462	Sa 1502	Th 1542	Th 1582	Tu 1622	Su 1662
Tu 1463	Su 1503	Fr 1543	Fr 1583	We 1623	Mo 1663
We 1464	Mo 1504	Sa 1544	Sa 1584	Th 1624	Tu 1664
Th 1465	Tu 1505	Su 1545	Su 1585	Fr 1625	We 1665
Fr 1466	We 1506	Mo 1546	Mo 1586	Sa 1626	Th 1666
Sa 1467	Th 1507	Tu 1547	Tu 1587	Su 1627	Fr 1667
Su 1468	Fr 1508	We 1548	We 1588	Mo 1628	Sa 1668
Mo 1469	Sa 1509	Th 1549	Th 1589	Tu 1629	Su 1669
Tu 1470	Su 1510	Fr 1550	Fr 1590	We 1630	Mo 1670
We 1471	Mo 1511	Sa 1551	Sa 1591	Th 1631	Tu 1671
Th 1472	Tu 1512	Su 1552	Su 1592	Fr 1632	We 1672
Fr 1473	We 1513	Mo 1553	Mo 1593	Sa 1633	Th 1673
Sa 1474	Th 1514	Tu 1554	Tu 1594	Su 1634	Fr 1674
Su 1475	Fr 1515	We 1555	We 1595	Mo 1635	Sa 1675
Mo 1476	Sa 1516	Th 1556	Th 1596	Tu 1636	Su 1676
Tu 1477	Su 1517	Fr 1557	Fr 1597	We 1637	Mo 1677
We 1478	Mo 1518	Sa 1558	Sa 1598	Th 1638	Tu 1678
Th 1479	Tu 1519	Su 1559	Su 1599	Fr 1639	We 1679
Fr 1480	We 1520	Mo 1560	We Mo 1600	Sa 1640	Th 1680 Sa

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Indicating the day on which each year began and ended,

From the year 1st to the 3956th A. M.

Su 1681	Fr 1721	We 1761	We 1801	Mo 1841	Sa 1881
Mo 1682	Sa 1722	Th 1762	Th 1802	Tu 1842	Su 1882
Tu 1683	Su 1723	Fr 1763	Fr 1803	We 1843	Mo 1883
We 1684	Mo 1724	Sa 1764	Sa 1804	Th 1844	Tu 1884
Th 1685	Tu 1725	Su 1765	Su 1805	Fr 1845	We 1885
Fr 1686	We 1726	Mo 1766	Mo 1806	Sa 1846	Th 1886
Sa 1687	Th 1727	Tu 1767	Tu 1807	Su 1847	Fr 1887
Su 1688	Fr 1728	We 1768	We 1808	Mo 1848	Sa 1888
Mo 1689	Sa 1729	Th 1769	Th 1809	Tu 1849	Su 1889
Tu 1690	Su 1730	Fr 1770	Fr 1810	We 1850	Mo 1890
We 1691	Mo 1731	Sa 1771	Sa 1811	Th 1851	Tu 1891
Th 1692	Tu 1732	Su 1772	Su 1812	Fr 1852	We 1892
Fr 1693	We 1733	Mo 1773	Mo 1813	Sa 1853	Th 1893
Sa 1694	Th 1734	Tu 1774	Tu 1814	Su 1854	Fr 1894
Su 1695	Fr 1735	We 1775	We 1815	Mo 1855	Sa 1895
Mo 1696	Sa 1736	Th 1776	Th 1816	Tu 1856	Su 1896
Tu 1697	Su 1737	Fr 1777	Fr 1817	We 1857	Mo 1897
We 1698	Mo 1738	Sa 1778	Sa 1818	Th 1858	Tu 1898
Th 1699	Tu 1739	Su 1779	Su 1819	Fr 1859	We 1899
Fr 1700	We 1740	Mo 1780	Mo 1820	Sa 1860	Th 1900
Sa 1701	Th 1741	Tu 1781	Tu 1821	Su 1861	Fr 1901
Su 1702	Fr 1742	We 1782	We 1822	Mo 1862	Sa 1902
Mo 1703	Sa 1743	Th 1783	Th 1823	Tu 1863	Su 1903
Tu 1704	Su 1744	Fr 1784	Fr 1824	We 1864	Mo 1904
We 1705	Mo 1745	Sa 1785	Sa 1825	Th 1865	Tu 1905
Th 1706	Tu 1746	Su 1786	Su 1826	Fr 1866	We 1906
Fr 1707	We 1747	Mo 1787	Mo 1827	Sa 1867	Th 1907
Sa 1708	Th 1748	Tu 1788	Tu 1828	Su 1868	Fr 1908
Su 1709	Fr 1749	We 1789	We 1829	Mo 1869	Sa 1909
Mo 1710	Sa 1750	Th 1790	Th 1830	Tu 1870	Su 1910
Tu 1711	Su 1751	Fr 1791	Fr 1831	We 1871	Mo 1911
We 1712	Mo 1752	Sa 1792	Sa 1832	Th 1872	Tu 1912
Th 1713	Tu 1753	Su 1793	Su 1833	Fr 1873	We 1913
Fr 1714	We 1754	Mo 1794	Mo 1834	Sa 1874	Th 1914
Sa 1715	Th 1755	Tu 1795	Tu 1835	Su 1875	Fr 1915
Su 1716	Fr 1756	We 1796	We 1836	Mo 1876	Sa 1916
Mo 1717	Sa 1757	Th 1797	Th 1837	Tu 1877	Su 1917
Tu 1718	Su 1758	Fr 1798	Fr 1838	We 1878	Mo 1918
We 1719	Mo 1759	Sa 1799	Sa 1839	Th 1879	Tu 1919
Th 1720	Tu 1760	Su 1800	Tu Su 1840	Fr 1880	We 1920 Fr

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Indicating the day on which each year began and ended.

From the year 1st to the 3956th A. M.

Sa 1921	Th 1961	Tu 2001	Tu 2041	Su 2081	Fr 2121
Su 1922	Fr 1962	We 2002	We 2042	Mo 2082	Sa 2122
Mo 1923	Sa 1963	Th 2003	Th 2043	Tu 2083	Su 2123
Tu 1924	Su 1964	Fr 2004	Fr 2044	We 2084	Mo 2124
We 1925	Mo 1965	Sa 2005	Sa 2045	Th 2085	Tu 2125
Th 1926	Tu 1966	Su 2006	Su 2046	Fr 2086	We 2126
Fr 1927	We 1967	Mo 2007	Mo 2047	Sa 2087	Th 2127
Sa 1928	Th 1968	Tu 2008	Tu 2048	Su 2088	Fr 2128
Su 1929	Fr 1969	We 2009	We 2049	Mo 2089	Sa 2129
Mo 1930	Sa 1970	Th 2010	Th 2050	Tu 2090	Su 2130
Tu 1931	Su 1971	Fr 2011	Fr 2051	We 2091	Mo 2131
We 1932	Mo 1972	Sa 2012	Sa 2052	Th 2092	Tu 2132
Th 1933	Tu 1973	Su 2013	Su 2053	Fr 2093	We 2133
Fr 1934	We 1974	Mo 2014	Mo 2054	Sa 2094	Th 2134
Sa 1935	Th 1975	Tu 2015	Tu 2055	Su 2095	Fr 2135
Su 1936	Fr 1976	We 2016	We 2056	Mo 2096	Sa 2136
Mo 1937	Sa 1977	Th 2017	Th 2057	Tu 2097	Su 2137
Tu 1938	Su 1978	Fr 2018	Fr 2058	We 2098	Mo 2138
We 1939	Mo 1979	Sa 2019	Sa 2059	Th 2099	Tu 2139
Th 1940	Tu 1980	Su 2020	Su 2060	Fr 2100	We 2140
Fr 1941	We 1981	Mo 2021	Mo 2061	Sa 2101	Th 2141
Sa 1942	Th 1982	Tu 2022	Tu 2062	Su 2102	Fr 2142
Su 1943	Fr 1983	We 2023	We 2063	Mo 2103	Sa 2143
Mo 1944	Sa 1984	Th 2024	Th 2064	Tu 2104	Su 2144
Tu 1945	Su 1985	Fr 2025	Fr 2065	We 2105	Mo 2145
We 1946	Mo 1986	Sa 2026	Sa 2066	Th 2106	Tu 2146
Th 1947	Tu 1987	Su 2027	Su 2067	Fr 2107	We 2147
Fr 1948	We 1988	Mo 2028	Mo 2068	Sa 2108	Th 2148
Sa 1949	Th 1989	Tu 2029	Tu 2069	Su 2109	Fr 2149
Su 1950	Fr 1990	We 2030	We 2070	Mo 2110	Sa 2150
Mo 1951	Sa 1991	Th 2031	Th 2071	Tu 2111	Su 2151
Tu 1952	Su 1992	Fr 2032	Fr 2072	We 2112	Mo 2152
We 1953	Mo 1993	Sa 2033	Sa 2073	Th 2113	Tu 2153
Th 1954	Tu 1994	Su 2034	Su 2074	Fr 2114	We 2154
Fr 1955	We 1995	Mo 2035	Mo 2075	Sa 2115	Th 2155
Sa 1956	Th 1996	Tu 2036	Tu 2076	Su 2116	Fr 2156
Su 1957	Fr 1997	We 2037	We 2077	Mo 2117	Sa 2157
Mo 1958	Sa 1998	Th 2038	Th 2078	Tu 2118	Su 2158
Tu 1959	Su 1999	Fr 2039	Fr 2079	We 2119	Mo 2159
We 1960	Mo 2000	Sa 2040	Sa 2080	Th 2120	Tu 2160

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Indicating the day on which each year began and ended.

From the year 1st to the 3956th A. M.

Fr 2161	We 2201	Mo 2241	Mo 2281	Sa 2321	Th 2361
Sa 2162	Th 2202	Tu 2242	Tu 2282	Su 2322	Fr 2362
Su 2163	Fr 2203	We 2243	We 2283	Mo 2323	Sa 2363
Mo 2164	Sa 2204	Th 2244	Th 2284	Tu 2324	Su 2364
Tu 2165	Su 2205	Fr 2245	Fr 2285	We 2325	Mo 2365
We 2166	Mo 2206	Sa 2246	Sa 2286	Th 2326	Tu 2366
Th 2167	Tu 2207	Su 2247	Su 2287	Fr 2327	We 2367
Fr 2168	We 2208	Mo 2248	Mo 2288	Sa 2328	Th 2368
Sa 2169	Th 2209	Tu 2249	Tu 2289	Su 2329	Fr 2369
Su 2170	Fr 2210	We 2250	We 2290	Mo 2330	Sa 2370
Mo 2171	Sa 2211	Th 2251	Th 2291	Tu 2331	Su 2371
Tu 2172	Su 2212	Fr 2252	Fr 2292	We 2332	Mo 2372
We 2173	Mo 2213	Sa 2253	Sa 2293	Th 2333	Tu 2373
Th 2174	Tu 2214	Su 2254	Su 2294	Fr 2334	We 2374
Fr 2175	We 2215	Mo 2255	Mo 2295	Sa 2335	Th 2375
Sa 2176	Th 2216	Tu 2256	Tu 2296	Su 2336	Fr 2376
Su 2177	Fr 2217	We 2257	We 2297	Mo 2337	Sa 2377
Mo 2178	Sa 2218	Th 2258	Th 2298	Tu 2338	Su 2378
Tu 2179	Su 2219	Fr 2259	Fr 2299	We 2339	Mo 2379
We 2180	Mo 2220	Sa 2260	Sa 2300	Th 2340	Tu 2380
Th 2181	Tu 2221	Su 2261	Su 2301	Fr 2341	We 2381
Fr 2182	We 2222	Mo 2262	Mo 2302	Sa 2342	Th 2382
Sa 2183	Th 2223	Tu 2263	Tu 2303	Su 2343	Fr 2383
Su 2184	Fr 2224	We 2264	We 2304	Mo 2344	Sa 2384
Mo 2185	Sa 2225	Th 2265	Th 2305	Tu 2345	Su 2385
Tu 2186	Su 2226	Fr 2266	Fr 2306	We 2346	Mo 2386
We 2187	Mo 2227	Sa 2267	Sa 2307	Th 2347	Tu 2387
Th 2188	Tu 2228	Su 2268	Su 2308	Fr 2348	We 2388
Fr 2189	We 2229	Mo 2269	Mo 2309	Sa 2349	Th 2389
Sa 2190	Th 2230	Tu 2270	Tu 2310	Su 2350	Fr 2390
Su 2191	Fr 2231	We 2271	We 2311	Mo 2351	Sa 2391
Mo 2192	Sa 2232	Th 2272	Th 2312	Tu 2352	Su 2392
Tu 2193	Su 2233	Fr 2273	Fr 2313	We 2353	Mo 2393
We 2194	Mo 2234	Sa 2274	Sa 2314	Th 2354	Tu 2394
Th 2195	Tu 2235	Su 2275	Su 2315	Fr 2355	We 2395
Fr 2196	We 2236	Mo 2276	Mo 2316	Sa 2356	Th 2396
Sa 2197	Th 2237	Tu 2277	Tu 2317	Su 2357	Fr 2397
Su 2198	Fr 2238	We 2278	We 2318	Mo 2358	Sa 2398
Mo 2199	Sa 2239	Th 2279	Th 2319	Tu 2359	Su 2399
Tu 2200	Su 2240	Fr 2280	Su Fr 2320	We 2360	Mo 2400 We

Tables

Indicating the day on which each year began and ended.

From the year 1st to the 3956th A. M.

Th 2401	Tu 2441	Su 2481	Su 2521	Fr 2561	We 2601
Fr 2402	We 2442	Mo 2482	Mo 2522	Sa 2562	Th 2602
Sa 2403	Th 2443	Tu 2483	Tu 2523	Su 2563	Fr 2603
Su 2404	Fr 2444	We 2484	We 2524	Mo 2564	Sa 2604
Mo 2405	Sa 2445	Th 2485	Th 2525	Tu 2565	Su 2605
Tu 2406	Su 2446	Fr 2486	Fr 2526	We 2566	Mo 2606
We 2407	Mo 2447	Sa 2487	Sa 2527	Th 2567	Tu 2607
Th 2408	Tu 2448	Su 2488	Su 2528	Fr 2568	We 2608
Fr 2409	We 2449	Mo 2489	Mo 2529	Sa 2569	Th 2609
Sa 2410	Th 2450	Tu 2490	Tu 2530	Su 2570	Fr 2610
Su 2411	Fr 2451	We 2491	We 2531	Mo 2571	Sa 2611
Mo 2412	Sa 2452	Th 2492	Th 2532	Tu 2572	Su 2612
Tu 2413	Su 2453	Fr 2493	Fr 2533	We 2573	Mo 2613
We 2414	Mo 2454	Sa 2494	Sa 2534	Th 2574	Tu 2614
Th 2415	Tu 2455	Su 2495	Su 2535	Fr 2575	We 2615
Fr 2416	We 2456	Mo 2496	Mo 2536	Sa 2576	Th 2616
Sa 2417	Th 2457	Tu 2497	Tu 2537	Su 2577	Fr 2617
Su 2418	Fr 2458	We 2498	We 2538	Mo 2578	Sa 2618
Mo 2419	Sa 2459	Th 2499	Th 2539	Tu 2579	Su 2619
Tu 2420	Su 2460	Fr 2500	Fr 2540	We 2580	Mo 2620
We 2421	Mo 2461	Sa 2501	Sa 2541	Th 2581	Tu 2621
Th 2422	Tu 2462	Su 2502	Su 2542	Fr 2582	We 2622
Fr 2423	We 2463	Mo 2503	Mo 2543	Sa 2583	Th 2623
Sa 2424	Th 2464	Tu 2504	Tu 2544	Su 2584	Fr 2624
Su 2425	Fr 2465	We 2505	We 2545	Mo 2585	Sa 2625
Mo 2426	Sa 2466	Th 2506	Th 2546	Tu 2586	Su 2626
Tu 2427	Su 2467	Fr 2507	Fr 2547	We 2587	Mo 2627
We 2428	Mo 2468	Sa 2508	Sa 2548	Th 2588	Tu 2628
Th 2429	Tu 2469	Su 2509	Su 2549	Fr 2589	We 2629
Fr 2430	We 2470	Mo 2510	Mo 2550	Sa 2590	Th 2630
Sa 2431	Th 2471	Tu 2511	Tu 2551	Su 2591	Fr 2631
Su 2432	Fr 2472	We 2512	We 2552	Mo 2592	Sa 2632
Mo 2433	Sa 2473	Th 2513	Th 2553	Tu 2593	Su 2633
Tu 2434	Su 2474	Fr 2514	Fr 2554	We 2594	Mo 2634
We 2435	Mo 2475	Sa 2515	Sa 2555	Th 2595	Tu 2635
Th 2436	Tu 2476	Su 2516	Su 2556	Fr 2596	We 2636
Fr 2437	We 2477	Mo 2517	Mo 2557	Sa 2597	Th 2637
Sa 2438	Th 2478	Tu 2518	Tu 2558	Su 2598	Fr 2638
Su 2439	Fr 2479	We 2519	We 2559	Mo 2599	Sa 2639
Mo 2440	Sa 2480	Th 2520	Th 2560	Tu 2600	Su 2640 Tu

Tables

Indicating the day on which each year began and ended.

From the year 1st to the 3956th A. M.

We 2641	Mo 2681	Sa 2721	Sa 2761	Th 2801	Tu 2841
Th 2642	Tu 2682	Su 2722	Su 2762	Fr 2802	We 2842
Fr 2643	We 2683	Mo 2723	Mo 2763	Sa 2803	Th 2843
Sa 2644	Th 2684	Tu 2724	Tu 2764	Su 2804	Fr 2844
Su 2645	Fr 2685	We 2725	We 2765	Mo 2805	Sa 2845
Mo 2646	Sa 2686	Th 2726	Th 2766	Tu 2806	Su 2846
Tu 2647	Su 2687	Fr 2727	Fr 2767	We 2807	Mo 2847
We 2648	Mo 2688	Sa 2728	Sa 2768	Th 2808	Tu 2848
Th 2649	Tu 2689	Su 2729	Su 2769	Fr 2809	We 2849
Fr 2650	We 2690	Mo 2730	Mo 2770	Sa 2810	Th 2850
Sa 2651	Th 2691	Tu 2731	Tu 2771	Su 2811	Fr 2851
Su 2652	Fr 2692	We 2732	We 2772	Mo 2812	Sa 2852
Mo 2653	Sa 2693	Th 2733	Th 2773	Tu 2813	Su 2853
Tu 2654	Su 2694	Fr 2734	Fr 2874	We 2814	Mo 2854
We 2655	Mo 2695	Sa 2735	Sa 2775	Th 2815	Tu 2855
Th 2656	Tu 2696	Su 2736	Su 2776	Fr 2816	We 2856
Fr 2657	We 2697	Mo 2737	Mo 2777	Sa 2817	Th 2857
Sa 2658	Th 2698	Tu 2738	Tu 2778	Su 2818	Fr 2858
Su 2659	Fr 2699	We 2739	We 2779	Mo 2819	Sa 2859
Mo 2660	Sa 2700	Th 2740	Th 2780	Tu 2820	Su 2860
Tu 2661	Su 2701	Fr 2741	Fr 2781	We 2821	Mo 2861
We 2662	Mo 2702	Sa 2742	Sa 2782	Th 2822	Tu 2862
Th 2663	Tu 2703	Su 2743	Su 2783	Fr 2823	We 2863
Fr 2664	We 2704	Mo 2744	Mo 2784	Sa 2824	Th 2864
Sa 2665	Th 2705	Tu 2745	Tu 2785	Su 2825	Fr 2865
Su 2666	Fri 2706	We 2746	We 2786	Mo 2826	Sa 2866
Mo 2667	Sa 2707	Th 2747	Th 2787	Tu 2827	Su 2867
Tu 2668	Su 2708	Fr 2748	Fr 2788	We 2828	Mo 2868
We 2669	Mo 2709	Sa 2749	Sa 2789	Th 2829	Tu 2869
Th 2670	Tu 2710	Su 2750	Su 2790	Fr 2830	We 2870
Fr 2671	We 2711	Mo 2751	Mo 2791	Sa 2831	Th 2871
Sa 2672	Th 2712	Tu 2752	Tu 2792	Su 2832	Fr 2872
Su 2673	Fr 2713	We 2753	We 2793	Mo 2833	Sa 2873
Mo 2674	Sa 2714	Th 2754	Th 2794	Tu 2834	Su 2874
Tu 2675	Su 2715	Fr 2755	Fr 2795	We 2835	Mo 2875
We 2676	Mo 2716	Sa 2756	Sa 2796	Th 2836	Tu 2876
Th 2677	Tu 2717	Su 2757	Su 2797	Fr 2837	We 2877
Fr 2678	We 2718	Mo 2758	Mo 2798	Sa 2838	Th 2878
Sa 2679	Th 2719	Tu 2759	Tu 2799	Su 2839	Fr 2879
Su 2680	Fr 2720	We 2760	We 2800	Mo 2840	Sa 2880

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Indicating the day on which each year began and ended.

From the year 1st to the 3956th A. M.

Tu 2881	Su 2921	Fr 2961	Fr 3001	We 3041	Mo 3081
We 2882	Mo 2922	Sa 2962	Sa 3002	Th 3042	Tu 3082
Th 2883	Tu 2923	Su 2963	Su 3003	Fr 3043	We 3083
Fr 2884	We 2924	Mo 2964	Mo 3004	Sa 3044	Th 3084
Sa 2885	Th 2925	Tu 2965	Tu 3005	Su 3045	Fr 3085
Su 2886	Fr 2926	We 2966	We 3006	Mo 3046	Sa 3086
Mo 2887	Sa 2927	Th 2967	Th 3007	Tu 3047	Su 3087
Tu 2888	Su 2928	Fr 2968	Fr 3008	We 3048	Mo 3088
We 2889	Mo 2929	Sa 2969	Sa 3009	Th 3049	Tu 3089
Th 2890	Tu 2930	Su 2970	Su 3010	Fr 3050	We 3090
Fr 2891	We 2931	Mo 2971	Mo 3011	Sa 3051	Th 3091
Sa 2892	Th 2932	Tu 2972	Tu 3012	Su 3052	Fr 3092
Su 2893	Fr 2933	We 2973	We 3013	Mo 3053	Sa 3093
Mo 2894	Sa 2934	Th 2974	Th 3014	Tu 3054	Su 3094
Tu 2895	Su 2935	Fr 2975	Fr 3015	We 3055	Mo 3095
We 2896	Mo 2936	Sa 2976	Sa 3016	Th 3056	Tu 3096
Th 2897	Tu 2937	Su 2977	Su 3017	Fr 3057	We 3097
Fr 2898	We 2938	Mo 2978	Mo 3018	Sa 3058	Th 3098
Sa 2899	Th 2939	Tu 2979	Tu 3019	Su 3059	Fr 3099
Su 2900	Fr 2940	We 2980	We 3020	Mo 3060	Sa 3100
Mo 2901	Sa 2941	Th 2981	Th 3021	Tu 3061	Su 3101
Tu 2902	Su 2942	Fr 2982	Fr 3022	We 3062	Mo 3102
We 2903	Mo 2943	Sa 2983	Sa 3023	Th 3063	Tu 3103
Th 2904	Tu 2944	Su 2984	Su 3024	Fr 3064	We 3104
Fr 2905	We 2945	Mo 2985	Mo 3025	Sa 3065	Th 3105
Sa 2906	Th 2946	Tu 2986	Tu 3026	Su 3066	Fr 3106
Su 2907	Fr 2947	We 2987	We 3027	Mo 3067	Sa 3107
Mo 2908	Sa 2948	Th 2988	Th 3028	Tu 3068	Su 3108
Tu 2909	Su 2949	Fr 2989	Fr 3029	We 3069	Mo 3109
We 2910	Mo 2950	Sa 2990	Sa 3030	Th 3070	Tu 3110
Th 2911	Tu 2951	Su 2991	Su 3031	Fr 3071	We 3111
Fr 2912	We 2952	Mo 2992	Mo 3032	Sa 3072	Th 3112
Sa 2913	Th 2953	Tu 2993	Tu 3033	Su 3073	Fr 3113
Su 2914	Fr 2954	We 2994	We 3034	Mo 3074	Sa 3114
Mo 2915	Sa 2955	Th 2995	Th 3035	Tu 3075	Su 3115
Tu 2916	Su 2956	Fr 2996	Fr 3036	We 3076	Mo 3116
We 2917	Mo 2957	Sa 2997	Sa 3037	Th 3077	Tu 3117
Th 2918	Tu 2958	Su 2998	Su 3038	Fr 3078	We 3118
Fr 2919	We 2959	Mo 2999	Mo 3039	Sa 3079	Th 3119
Sa 2920	Th 2960	Tu 3000 Th	Tu 3040	Su 3080	Fr 3120 Su

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Indicating the day on which each year began and ended.

From the year 1st to the 3956th A. M.

Mo 3121	Sa 3161	Th 3201	Th 3241	Tu 3281	Su 3321
Tu 3122	Su 3162	Fr 3202	Fr 3242	We 3282	Mo 3322
We 3123	Mo 3163	Sa 3203	Sa 3243	Th 3283	Tu 3323
Th 3124	Tu 3164	Su 3204	Su 3244	Fr 3284	We 3324
Fr 3125	We 3165	Mo 3205	Mo 3245	Sa 3285	Th 3325
Sa 3126	Th 3166	Tu 3206	Tu 3246	Su 3286	Fr 3326
Su 3127	Fr 3167	We 3207	We 3247	Mo 3287	Sa 3327
Mo 3128	Sa 3168	Th 3208	Th 3248	Tu 3288	Su 3328
Tu 3129	Su 3169	Fr 3209	Fr 3249	We 3289	Mo 3329
Su 3130	Mo 3170	Sa 3210	Sa 3250	Th 3290	Tu 3330
Th 3131	Tu 3171	Su 3211	Su 3251	Fr 3291	We 3331
Fr 3132	We 3172	Mo 3212	Mo 3252	Sa 3292	Th 3332
Sa 3133	Th 3173	Tu 3213	Tu 3253	Su 3293	Fr 3333
Su 3134	Fr 3174	We 3214	We 3254	Mo 3294	Sa 3334
Mo 3135	Sa 3175	Th 3215	Th 3255	Tu 3295	Su 3335
Tu 3136	Su 3176	Fr 3216	Fr 3256	We 3296	Mo 3336
We 3137	Mo 3177	Sa 3217	Sa 3257	Th 3297	Tu 3337
Th 3138	Tu 3178	Su 3218	Su 3258	Fr 3298	We 3338
Fr 3139	We 3179	Mo 3219	Mo 3259	Sa 3299	Th 3339
Sa 3140	Th 3180	Tu 3220	Tu 3260	Su 3300	Fr 3340
Su 3141	Fr 3181	We 3221	We 3261	Mo 3301	Sa 3341
Mo 3142	Sa 3182	Th 3222	Th 3262	Tu 3302	Su 3342
Tu 3143	Su 3183	Fr 3223	Fr 3263	We 3303	Mo 3343
We 3144	Mo 3184	Sa 3224	Sa 3264	Th 3304	Tu 3344
Th 3145	Tu 3185	Su 3225	Su 3265	Fr 3305	We 3345
Fr 3146	We 3186	Mo 3226	Mo 3266	Sa 3306	Th 3346
Sa 3147	Th 3187	Tu 3227	Tu 3267	Su 3307	Fr 3347
Su 3148	Fr 3188	We 3228	We 3268	Mo 3308	Sa 3348
Mo 3149	Sa 3189	Th 3229	Th 3269	Tu 3309	Su 3349
Tu 3150	Su 3190	Fr 3230	Fr 3270	We 3310	Mo 3350
We 3151	Mo 3191	Sa 3231	Sa 3271	Th 3311	Tu 3351
Th 3152	Tu 3192	Su 3232	Su 3272	Fr 3312	We 3352
Fr 3153	We 3193	Mo 3233	Mo 3273	Sa 3313	Th 3353
Sa 3154	Th 3194	Tu 3234	Tu 3274	Su 3314	Fr 3354
Su 3155	Fr 3195	We 3235	We 3275	Mo 3315	Sa 3355
Mo 3156	Sa 3196	Th 3236	Th 3276	Tu 3316	Su 3356
Tu 3157	Su 3197	Fr 3237	Fr 3277	We 3317	Mo 3357
We 3158	Mo 3198	Sa 3238	Sa 3278	Th 3318	Tu 3358
Th 3159	Tu 3199	Su 3239	Su 3279	Fr 3319	We 3359
Fr 3160	We 3200	Mo 3240	We Mo 3280	Sa 3320	Th 3360 Sa

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Indicating the day on which each year began and ended.

From the year 1st to the 3956th A. M.

Su 3361	Fr 3401	We 3441	We 3481	Mo 3521	Sa 3561
Mo 3362	Sa 3402	Th 3442	Th 3482	Tu 3522	Su 3562
Tu 3363	Su 3403	Fr 3443	Fr 3483	We 3523	Mo 3563
We 3364	Mo 3404	Sa 3444	Sa 3484	Th 3524	Tu 3564
Th 3365	Tu 3405	Su 3445	Su 3485	Fr 3525	We 3565
Fr 3366	We 3406	Mo 3446	Mo 3486	Sa 3526	Th 3566
Sa 3367	Th 3407	Tu 3447	Tu 3487	Su 3527	Fr 3567
Su 3368	Fr 3408	We 3448	We 3488	Mo 3528	Sa 3568
Mo 3369	Sa 3409	Th 3449	Th 3489	Tu 3529	Su 3569
Tu 3370	Su 3410	Fr 3450	Fr 3490	We 3530	Mo 3570
We 3371	Mo 3411	Sa 3451	Sa 3491	Th 3531	Tu 3571
Th 3372	Tu 3412	Su 3452	Mo 3492	Fr 3532	We 3572
Fr 3373	We 3413	Mo 3453	Tu 3493	Sa 3533	Th 3573
Sa 3374	Th 3414	Tu 3454	We 3494	Su 3534	Fr 3574
Su 3375	Fr 3415	We 3455	Th 3495	Mo 3535	Sa 3575
Mo 3376	Sa 3416	Th 3456	Fr 3496	Tu 3536	Su 3576
Tu 3377	Su 3417	Fr 3457	Sa 3497	We 3537	Mo 3577
We 3378	Mo 3418	Sa 3458	Su 3498	Th 3538	Tu 3578
Th 3379	Tu 3419	Su 3459	Mo 3499	Fr 3539	We 3579
Fr 3380	We 3420	Mo 3460	Tu 3500	Sa 3540	Th 3580
Sa 3381	Th 3421	Tu 3461	We 3501	Su 3541	Fr 3581
Su 3382	Fr 3422	We 3462	Th 3502	Mo 3542	Sa 3582
Mo 3383	Sa 3423	Th 3463	Fr 3503	Tu 3543	Su 3583
Tu 3384	Su 3424	Fr 3464	Sa 3504	We 3544	Mo 3584
We 3385	Mo 3425	Sa 3465	Su 3505	Th 3545	Tu 3585
Th 3386	Tu 3426	Su 3466	Mo 3506	Fr 3546	We 3586
Fr 3387	We 3427	Mo 3467	Tu 3507	Sa 3547	Th 3587
Sa 3388	Tu 3428	Tu 3468	We 3508	Su 3548	Fr 3588
Su 3389	Fr 3429	We 3469	Th 3509	Mo 3549	Sa 3589
Mo 3390	Sa 3430	Th 3470	Fr 3510	Tu 3550	Su 3590
Tu 3391	Su 3431	Fr 3471	Sa 3511	We 3551	Mo 3591
We 3392	Mo 3432	Sa 3472	Su 3512	Th 3552	Tu 3592
Th 3393	Tu 3433	Su 3473	Mo 3513	Fr 3553	We 3593
Fr 3394	We 3434	Mo 3474	Tu 3514	Sa 3554	Th 3594
Sa 3395	Th 3435	Tu 3475	We 3515	Su 3555	Fr 3595
Su 3396	Fr 3436	We 3476	Th 3516	Mo 3556	Sa 3596
Mo 3397	Sa 3437	Th 3477	Fr 3517	Tu 3557	Su 3597
Tu 3398	Su 3438	Fr 3478	Sa 3518	We 3558	Mo 3598
We 3399	Mo 3439	Sa 3479	Su 3519	Th 3559	Tu 3599
Th 3400	Tu 3440	Su 3480	Tu 3520	Fr 3560	We 3600 Fr

Tables

Indicating the day on which each year began and ended.

From the year 1st to the 3956th A. M.

Fr 3841	Th 3861	We 3881	Tu 3901	Mo 3921	Su 3941
Sa 3842	Fr 3862	Th 3882	We 3902	Tu 3922	Mo 3942
Su 3843	Sa 3863	Fr 3883	Th 3903	We 3923	Tu 3943
Mo 3844	Su 3864	Sa 3884	Fr 3904	Th 3924	We 3944
Tu 3845	Mo 3865	Su 3885	Sa 3905	Fr 3925	Th 3945
We 3846	Tu 3866	Mo 3886	Su 3906	Sa 3926	Fr 3946
Th 3847	We 3867	Tu 3887	Mo 3907	Su 3927	Sa 3947
Fr 3848	Th 3868	We 3888	Tu 3908	Mo 3928	Su 3948
Sa 3849	Fr 3869	Th 3889	We 3909	Tu 3929	Mo 3949
Su 3850	Sa 3870	Fr 3890	Th 3910	We 3930	Tu 3950
Mo 3851	Su 3871	Sa 3891	Fr 3911	Th 3931	We 3951
Tu 3852	Mo 3872	Su 3892	Sa 3912	Fr 3932	Th 3952
We 3853	Tu 3873	Mo 3893	Su 3913	Sa 3933	Fr 3953
Th 3854	We 3874	Tu 3894	Mo 3914	Su 3934	Sa 3954
Fr 3855	Th 3875	We 3895	Tu 3915	Mo 3935	Su 3955
Sa 3856	Fr 3876	Th 3896	We 3916	Tu 3936	Mo 3956 Sa
Su 3857	Sa 3877	Fr 3897	Th 3917	We 3937	
Mo 3858	Su 3878	Sa 3898	Fr 3918	Th 3938	
Tu 3859	Mo 3879	Su 3899	Sa 3919	Fr 3939	
We 3860	Tu 3880	Mo 3900	Su 3920	Sa 3940	

By accepting Usher's chronology, it would read thus:

Mo 3956
Tu 3957
We 3958
Th 3959
Fr 3960 Th
Fr 3961

See Calendar, Friday-Friday, page —.

PART SECOND

CHRONOLOGY

Chronology, from the Greek *chronos*, time and *logos*, discourse, is the science of the divisions of time. It is divided into Mathematical and Historical. The mathematical chronology has reference to the measurement of time concerning the complete evolution of recurring celestial phenomena. The object of the historical chronology is to determine the relation between events and fix their dates. As in geography, longitude is measured from some arbitrary line, such as the meridian through Greenwich, so in historical chronology, dates are fixed by giving their distance from some arbitrary point of time usually chosen, because of some remarkable occurrence which signalized it. Such a fixed point or epoch forms the beginning of an era. In early times, the more accurate methods of mathematics being unknown, a generation or the lifetime of leading persons in a nation were assumed as units in historical chronology. Hence the great variety of eras which confuses somewhat the student of Chronology. Thus, the era of the Greeks began with the year of the first Olympiad, or that in which Coroebus was victor, being the first time the victor's name was recorded at the celebration of the games, and this is calculated to correspond to the year 776 B. C. From this epoch, the Greeks measured time by Olympiads or periods of four years.

The Roman era was reckoned from the founding of the city of Rome 752 B. C. The Roman and Greek method of measuring time continued to be in use long after the birth of Christ, for the Olympiads appear to have been employed in Europe down to the 304th, or 440 A. D. From 312 A. D., however, the mode of computation throughout the Roman empire, was by Indictions, which were periods of fifteen years.

The exact chronology, as to many periods, is largely conjectural. The Christian era starts at the birth of Christ; the years before are marked B. C., and those after A. D. (*Anno Domini*). This era is now almost universally accepted. The era of the creation is, however, fixed at many widely varying

points. The reckoning of Constantinople, which is still used in the Greek Church, makes it 5509 B. C.; the Abyssinian Church, 5492; the Alexandrian Church, 5502 and later 5492; the Jews, 3761. As reckoned by our ordinary Chronology, the precise dates of commencing the above and other eras are:

Grecian, Mundane.....	Sept. 1, 5598	B. C.
Constantinople, Civil.....	Sept. 1, 5508	"
Alexandrian	Aug. 29, 5502	"
Antioch, Mundane.....	Sept. 1, 5492	"
Julian Period.....	Jan. 1, 4713	"
Mundane, Usher.....	Oct. 4004	"
Mundane, Jewish.....	Oct. 3761	"
Abraham	Oct. 1, 2015	"
Olympiads	July 1, 776	"
Foundation of Rome.....	April 24, 752	"
Methonic Cycle.....	July 15, 432	"
Macedonian, Selencidae.....	Sept. 1, 312	"
Tyrian	Oct. 19, 126	"
Sidonian	Oct. 110	"
Nabonassar	Feb. 26, 747	"
Caesarean, of Antioch.....	Sept. 1, 48	"
Julian Year, acc. to Usher.....	Jan. 1, 45	"
Spanish era.....	Jan. 1, 38	"
Actian	Jan. 1, 30	"
Augustan	Feb. 14, 27	"
Usual Christian.....	Jan. 1, 1	A. D.
Destruction of Jerusalem.....	Sept. 1, 69	"
Era of Machabees.....	Nov. 24, 166	"
Era of Diocletian.....	Aug. 29, 284	"
Era of Ascension.....	Nov. 12, 295	"
Armenian	July 9, 552	"
Mohammenan Hegirâ.....	July 16, 622	"
Persian of Yezdegird.....	June 16, 632	"

Chronological Table of Geographical Discoveries.

A. D.

861. Ferne Islands, discovered about this time by a Scandinavian vessel.
871. Iceland, discovered by some Norwegian Chiefs, who were compelled to leave their native country. According to some accounts, it had been visited before this by a Scandinavian pirate, Naddodd.
950. Greenland, discovered by the Icelanders about this period. The first colony established there was destroyed by a pestilence in the 14th century, and by the accumulation of ice between Greenland and Iceland all intercourse was cut off.

A. D.

1002. Winland dat Gode (Good Wine Land), a part of America, was discovered by the Northmen, Eric and Biorn.
1344. Madeira, the well-known wine-producing island, was discovered by Juan Gonzalez and Tristan Vaz, Portuguese.
1345. Canary Isles, discovered by some Genoese and Spanish seamen, having been known to the ancients.
1364. Guinea, the coast of, discovered by some seamen of Dieppe, about this period.
1418. Porto Santo, discovered by Vaz and Zarco, Portuguese.
- 1440-1445. Senegal River, discovered by the Portuguese.
1446. Cape Verde, discovered by Denis Fernandez, a Portuguese.
1448. Azores Islands, discovered by Gonzalio Vello, a Portuguese.
1449. Cape Verde Islands, discovered by Antonio de Noli, a Genoese in the service of Portugal.
1471. Island of St. Thomas, under the Equator, discovered.
1484. Congo, discovered by the Portuguese, under Diego Cam.
1484. Cape Bojador, or Nun, doubled for the first time by the Portuguese.
1486. Cape of Good Hope discovered by Bartholomew Diaz, the Portuguese.
1492. Lucayos, or Bahama Islands. These were the first points of discovery by Columbus. San Salvador, one of these islands, was first seen by this great navigator on the 11th or 12th of October in this year.
1492. Cuba, Island of Hispaniola, or St. Domingo, discovered by Columbus in his first voyage.
1493. Jamaica, St. Christopher's Dominica, discovered by Columbus in his second voyage.
1497. Cape of Good Hope, doubled by Vasco di Gama, and the passage to India discovered.
1497. Newfoundland, discovered by John Cabot, who first called it Prima Vista and Baccalaos.
1498. Continent of America, discovered by Columbus.
1498. Malabar, coast of, discovered by Vasco di Gama.
1498. Mozambique, island of, discovered by Vasco di Gama.
1499. Guiana and Venezuela, discovered by Ojeda and Amerigo Vespucci, under Portuguese flag.
1501. Brazil carefully explored by Amerigo Vespucci.
1501. Labrador and River St. Lawrence, discovered by Cortecal, who sailed from Lisbon on a voyage of discovery for the Portuguese.
1502. Gulf of Mexico. Some of the shores of this gulf explored by Columbus on his last voyage.
1502. St. Helena, the island of, discovered by Jean de Nova, a Portuguese.
1506. Ceylon, discovered by the Portuguese. Ceylon was known to the Romans in the time of Claudius.

A. D.

1506. Madagascar, island of, discovered by Tristan da Cunha, and revisited by the Portuguese navigator, Fernandez Pereira in 1508. This island was first called St. Lawrence, having been discovered on the day of that Saint.
1503. Canada, visited by Thomas Aubert. Known before to fishermen, who had been thrown there by a tempest.
1508. Ascension Isle, discovered by Tristan da Cunha.
1508. Sumatra, island of, discovered by Siqueyra, a Portuguese.
1511. Sumatra, more accurately examined by the Portuguese.
1511. Molucca Isles, discovered by the Portuguese.
1511. Sunda Isles, discovered by Abrew, a Portuguese.
1512. Maldives. A Portuguese navigator, wrecked on these islands, found them in occasional possession of the Arabians.
1512. Florida, discovered by Ponce de Leon, a Spanish navigator.
1513. Borneo and Java. The Portuguese became acquainted with these islands.
1513. South Sea. The Great Ocean was discovered this year from the mountains of Darien, by Nuguez de Balboa, and subsequently navigated by Magellan. The supposition of the New World being part of India now ceased.
1515. Peru, discovered by Perez de la Rúa.
1516. Rio Janeiro, discovered by Diaz de Solis.
1516. Rio de la Plata, discovered by the same.
1517. China, discovery of, by sea, by Fernand Perez d'Andrada.
1517. Bengal, discovered by some Portuguese thrown on the coast by a tempest.
1518. Mexico, discovered by the Spaniards; conquered by Cortes in 1519.
1519. Magellan, Straits of, passed by Magellan with a fleet discovery fitted out by the Emperor Charles V. The first voyage round the world was undertaken by this navigator; and his vessel performed the enterprise, although the commander perished.
1520. Terra del Fuego, discovered by Magellan.
1521. Ladron Islands, discovered by Magellan.
1521. Philippines. This archipelago was discovered by Magellan, who lost his life here in a skirmish.
1524. New France. The first voyage of discovery made by the French under Francis the First, one of whose ships, after reaching Florida, coasted along as far as 50 degrees north latitude, and gave to this part the name of new France.
1524. North America, travelled over from Florida to Newfoundland by Verrizana, a Florentine, in the service of France.

A. D.

1525. New Holland, discovered by the Portuguese about this time; this immense tract was for some time neglected by Europeans, but was visited by the Dutch, at various periods, from 1619 to 1644.
1527. New Guinea, discovered by Sanvedra, a Spaniard, sent from Mexico, by Cortez.
1530. Guinea, the first voyage to, made by an English ship for elephants' teeth.
1534. Canada, visited by Cartier, of St. Malo; a settlement having previously been made in 1528, by Verrizzani, who took possession in the name of Francis I, of France.
1535. California, discovered by Cortez.
1537. Chili, discovered by Diego de Almagro, one of the conquerors of Peru.
1541. Labrador, discovered by a French engineer, Alphonse.
1541. India, the first English ship sailed to, for the purpose of attacking the Portuguese.
1542. Japan, discovered by the Portuguese, Antonio de Meta and Antonio de Peyxoto, who were cast by a tempest on its coast.
1545. Potosi, mines of, discovered by the Spaniards.
1552. Spitzbergen, observed by the English, but mistaken for part of Greenland. Visited by Barentz, a Dutch navigator in search of a north-east passage, in 1596.
1553. White Sea. This sea, which had not been visited since the time of Alfred, was now supposed to be discovered by Chancellor, the English navigator.
1553. Nova Zembla, discovered by Willoughby, an English seaman.
1575. Solomon's Isles, discovered by Mendana, a Spaniard, sent by the Government of Peru.
1576. Frobisher's Strait, discovered by the English navigator whose name it bears.
1576. Greenland, further explored by Frobisher, who also penetrated farther between this country and Labrador.
1577. New Albion, discovered by Drake, who was the second to attempt a voyage round the world, which he performed in three years.
1580. Siberia, discovered by Yermak Timophelevitch, Chief of the Cossacks.
1587. Davie's Straits, discovered by the English navigator whose name it bears, in his voyage for the discovery of a north-west passage.
1594. Falkland Islands, discovered by the English navigator, Sir John Hawkins.
1596. Marquesas, discovered by Mendana, a Spaniard, on his voyage from Peru to found a colony in the Solomon Isles.

A. D.

1596. Solitary Island, discovered by Mendana on the above-named voyage.
1606. Archipelago del Espirito Santo, discovered by Guirus, a Portuguese sent from Peru. These islands are the cyclades of the Bougainville, and the New Hebrides of Cook.
1606. Otaheite, supposed to be discovered by Guiros, who named it Segittaria.
- 1607-1610. Hudson's Bay, discovered by the celebrated English navigator, Hudson, on his third voyage. Venturing to pass the winter in this bay on his fourth voyage, he was, with four others, thrown by his sailors into a boat, and left to perish.
1607. Chesapeake Bay, discovered by John Smith.
1615. Straits of Le Maire, discovered with the island of Staten on the east, by Le Maire, a merchant of Amsterdam, and Schouten, a merchant of Horn.
1616. Cape Horn, doubled by Le Marie and Schouten, Dutch navigators, who called it after the town of which Schouten was a native.
1616. Van Dieman's Land, discovered by the Dutch.
1616. Baffin's Bay, discovered by William Baffin, an Englishman.
1636. Frozen Ocean. In this year the Russians discovered that this ocean washed and bounded the north of Asia. The first Russian ship sailed down the Lena into this sea.
1642. New Zealand, with the southern port of Van Dieman's Land, discovered by Tasman, a Dutch navigator.
1654. Bourbon, isle of, occupied by the French.
1673. Louisiana, discovered by the French. This country received its name from Le Salle, a Frenchman, who explored the Mississippi, in 1682.
1686. Easter Islands, discovered by Roggewein, a Dutch navigator.
1690. Kamschatka, the principal settlement of the Russians, on the coast of Asia, discovered by a Cossack chief, Morosko. This country was taken possession of by the Russians in 1697.
1699. New Britain. This island, and the straits which separate it from New Guinea, discovered by Dampier. This enterprising seaman made a voyage round the world at the period of this discovery.
1711. Kurile Isles, occupied by the Russians. The people of these islands, which are twenty-one in number, still pay tribute to Russia. They are principally volcanic.
1648. Behring's Strait, explored and designated by a Danish navigator in the service of Russia, whose name it bears. Behring thus established that the continents of Asia and America are not united, but are distant from each other about thirty-nine miles.

A. D.

1728. Kamschatka, ascertained by Behring to be a peninsula.
1741. Aleutian Isles, on the coast of North America, discovered by Behring. A more accurate survey of these islands was made under the Russian Government, by Captains Billing and Sarytchef, from 1781 to 1798.
1765. Duke of York's Islands, discovered by Byron.
1765. Isles of Danger, discovered by Byron.
1767. Otaheite, discovered by Wallis.
1768. Cook's Strait, discovered by Captain Cook on his voyage round the world, which occupied from 1768 to 1771.
1770. New South Wales, discovered by Captain Cook.
1772. Island of Desolation, the first land south of India, discovered by Kerguelen, and called by his name. Subsequently called the Island of Desolation by Captain Cook.
1774. New Caledonia, discovered by Captain Cook in his second voyage, 1772-1775.
1778. Icy Cape, discovered by Captain Cook.
1778. Sandwich Islands, discovered by Captain Cook in his third voyage, which commenced in 1776. He lost his life in 1779.
1797. Bass's Straits. Mr. Bass, surgeon of H. M. S. *Reliance*, penetrated as far as Western Port, in a small open boat, from Port Jackson, and was of opinion that a strait existed between New South Wales and Van Dieman's Land. In 1799, Lieut. Flinders circumnavigated Van Dieman's Land, and named the Strait after Mr. Bass.
- 1804, 5, 6. Missouri, explored to its sources by Captains Lewis and Clarke, and the origin and source of the Columbia ascertained.
1819. Barrow's Straits, discovered by Lieut. Parry, who penetrated as far as Melville Island, in lat. 74 deg. 26 min. N. and long. 113 deg. 47 min. W.
1819. New South Shetland, discovered by Mr. Smith, of the brig *William*, bound to Valparaiso.
- 1819-1822. North America, the northern limits of, determined by Captain Franklin, from the mouth of the Coppermine River to Cape Turnagain.
1821. Asia, the northern limits of, determined by Baron Wrangle.
- 1825-26. North America. Franklin's second expedition, in which the coast between the mouths of the Coppermine and M'Kenzie's rivers, and the coast from the mouth of the latter to 149½ W. long., were discovered.
1827. North America. In August of this year, Captain Beechey, in H. M. S. *Blossom*, discovered the coast from Icy Cape to Point Barrow, leaving about 140 miles of coast unexplored between this Point and Point Beechey. Point Barrow is 156½ W. long.

A. D.

- 1829-33. North America. North-west passage. Discoveries of Captain Ross, October 18th, 1833.
1830. The Niger (termination of) discovered by Richard and John Lander, November 18th.
1838. Arctic discoveries by Dease and Simpson.
1849. Livingstone and friends trace River Zouga, Africa.
1855. Livingstone discovers Victoria Falls, Africa.
- 1856-1859. Du Chaillu explores Equatorial Africa.
1857. Captain Burton crosses Equatorial Africa.
1858. Captain Speke discovers Victoria Nyanza.
1875. Cameron crosses the continent of Africa.
1876. British Arctic expedition within 1,000 miles of North Pole.
1877. Stanley surveys, takes Tanganyika and crosses Africa from east to west, and identified the Lualaba with the Congo river.
- 1878-79. Nordenskjöld accomplishes the North-east passage from the Atlantic to the Pacific.
1884. The Jeannette sailed for the Arctic regions, July 8, 1879. Crushed by ice Jun 23, 1881. The remains of Lieut. Commander De Long and party arrived in New York February 18, 1884.

States and Territories.	Population in 1860.	Troops furnished 1861-65.	Col'd Tr'ps 1861-5.	Number of men drafted.					Bounties paid by States.	Per cent. to pop.
				Num. drwn.	Fall'd to re-port.	Ex-em'd.	Fur. sub. etc.	Held for serv.		
Connecticut.	460,147	57,379	1,764	12,081	1,014	6,804	3,842	202	\$6,887,554	12.4
Maine	628,279	72,114	104	27,324	3,760	12,997	4,946	1,777	7,837,644	11.5
Massachus'ts.	1,231,066	152,048	3,966	41,582	5,167	27,070	8,283	912	22,965,550	12.3
New Hamp.	326,073	34,629	125	10,806	464	5,478	3,654	210	9,636,313	10.6
Rhode Island.	174,620	23,699	1,837	4,321	249	2,809	1,142	117	8,228,779	13.6
Vermont	315,098	35,262	120	7,743	429	4,066	2,646	437	4,528,775	11.1
New England States	3,135,283	375,131	7,916	103,907	11,083	59,254	24,613	3,869	52,676,606	12.0
New Jersey	672,065	81,017	1,185	32,325	6,205	8,224	9,650	951	23,808,967	12.0
New York	3,880,755	467,040	4,125	151,488	31,745	68,006	31,529	3,210	86,629,228	12.0
Pennsylvania	2,906,215	366,107	8,612	178,873	31,309	70,913	40,807	8,615	43,154,987	12.2
Middle States	7,458,985	914,164	13,922	362,686	69,259	147,143	81,986	12,776	159,653,182	12.5
Colorado Ter.	34,277	4,903	95	.....	.....	.....	.....	.....	.....	3.3
Dakota Ter.	4,837	206	.....	.....	.....	.....	.....	.....	.....	4.2
Illinois	1,711,951	259,147	1,811	32,085	9,519	9,555	5,459	3,538	17,296,205	15.1
Indiana	1,350,428	197,147	1,537	41,158	6,235	15,478	5,906	7,597	9,182,354	14.3
Iowa	674,913	76,309	440	7,548	702	2,446	1,264	1,862	1,615,171	11.3
Kansas	107,206	20,151	2,080	1,420	419	287	210	119	57,407	18.6
Michigan	749,113	89,372	1,387	22,122	4,294	7,130	3,773	1,809	9,664,855	11.9
Minnesota	173,023	25,052	104	10,796	2,058	4,449	1,291	862	2,000,464	14.5
Nebraska Ter.	28,841	3,157	.....	.....	.....	.....	.....	.....	.....	10.9
N. Mexico Ter.	93,516	6,561	.....	.....	.....	.....	.....	.....	.....	7.0
Ohio	2,339,511	319,659	5,092	50,400	9,368	19,751	10,988	4,241	23,557,373	13.6
Wisconsin	775,881	96,424	165	38,395	11,742	14,732	6,718	3,722	6,855,356	12.4
West'n States and Ter.	8,042,497	1,068,088	12,711	203,264	44,337	73,828	35,699	23,750	60,229,185	13.6
California	379,994	15,725	.....	.....	.....	.....	.....	.....	.....	4.1
Nevada	6,857	1,080	.....	.....	.....	.....	.....	.....	.....	15.7
Oregon	52,465	1,810	.....	.....	.....	.....	.....	.....	.....	3.4
Wash'g'n Ter.	11,594	964	.....	.....	.....	.....	.....	.....	.....	8.3
Pacific States	450,910	15,579	.....	.....	.....	.....	.....	.....	.....	4.3
Delaware	112,216	13,670	954	8,636	1,443	4,170	2,534	425	1,136,599	12.2
Dist. of Col.	75,080	16,872	3,269	14,338	5,954	5,665	1,751	968	134,010	22.4
Kentucky	1,155,684	79,025	23,703	42,931	9,563	8,088	5,787	1,860	692,577	6.8
Maryland	687,049	50,316	8,718	29,319	9,207	11,011	6,194	1,426	6,271,962	7.9
Missouri	1,182,012	109,111	5,344	21,519	9,444	5,781	1,638	1,031	1,232,149	9.2
W. Virginia.	393,234	32,068	106	3,180	1,014	509	219	242	864,737	8.8
Border States	3,605,275	801,032	45,184	106,412	36,565	35,284	18,063	5,952	10,382,064	8.3
Alabama	964,201	2,578	4,969	.....	.....	.....	.....	.....	.....	.....
Arkansas	435,450	8,289	5,526	.....	.....	.....	.....	.....	.....	1.9
Florida	140,424	1,290	1,044	.....	.....	.....	.....	.....	.....	.....
Georgia	1,057,286	.....	.....	.....	.....	.....	.....	.....	.....	.....
Louisiana	708,002	5,224	3,486	.....	.....	.....	.....	.....	.....	.....
Mississippi	791,305	545	17,899	.....	.....	.....	.....	.....	.....	.....
N. Carolina	992,632	3,156	5,035	.....	.....	.....	.....	.....	.....	.....
S. Carolina	703,708	.....	5,462	.....	.....	.....	.....	.....	.....	.....
Tennessee	1,109,801	31,092	20,133	.....	.....	.....	.....	.....	.....	.....
Texas	604,215	1,965	47	.....	.....	.....	.....	.....	.....	.....
Virginia	1,203,084	.....	.....	.....	.....	.....	.....	.....	.....	.....
South. States.	8,710,098	54,137	63,571	.....	.....	.....	.....	.....	.....	.....
Indian Nat'n.	.....	3,830	.....	.....	.....	.....	.....	.....	.....	.....
Col'd Troops.	.....	93,441	.....	.....	.....	.....	.....	.....	.....	.....
Grand Total.	.....	2,859,132	173,079	776,829	161,344	315,509	73,007	46,347	285,941,036	9.1
At large.	.....	.....	753	.....	.....	.....	.....	.....	.....	.....
Not ac'ted for Officers.	.....	.....	5,083	.....	.....	.....	.....	.....	.....	.....
	.....	.....	6,122	.....	.....	.....	.....	.....	.....	.....
	.....	.....	186,017	.....	.....	.....	.....	.....	.....	.....

Chronological History of the United States.

A. D.

- | | | |
|-------|---|-----------|
| 1492. | America discovered by Christopher Columbus.... | Oct. 12. |
| 1497. | Labrador discovered by John and Sebastian Cabot. | July 3. |
| 1498. | Coast of North America explored by Sebastian Cabot. | |
| | Continent of South America discovered by Columbus.... | Aug. 10. |
| 1499. | South America visited by Amerigo Vespucci. | |
| 1512. | Florida discovered by Juan Ponce de Leon.... | April 6. |
| 1513. | The Pacific Ocean discovered by Vasco Nunez de Balboa.. | Sept. 27. |
| 1520. | Carolina visited by Lucas Vasquez de Ayllon. | |
| 1521. | Mexico conquered by Fernando Cortez. | |
| 1524. | Coast of North America explored by John Verrazani. | |
| 1534. | The St. Lawrence River discovered by Jacques Cartier... | June. |
| 1541. | The Mississippi River discovered by De Soto. | |
| 1562. | Colony of Huguenots settled at Port Royal entrance. | |
| 1564. | Colony of Huguenots settled in Florida. | |
| 1565. | St. Augustine, Florida, founded by the Spaniards.. | Sept. 18. |
| | Huguenot colony in Florida destroyed by the Spaniards.. | Oct. 1. |
| 1583. | Newfoundland taken possession of by Sir H. Gilbert. | |
| 1584. | Amidas and Barlow explored the coast of North Carolina. | |
| 1585. | First attempt to form a settlement at Roanoke, by Sir W. Raleigh. | |
| 1587. | Second attempt to form a settlement at Roanoke. | |
| 1602. | Cape Cod discovered by Bartholomew Gosnold.... | May 24. |
| 1605. | Port Royal, in Nova Scotia, settled by the French. | |
| 1606. | London and Plymouth Companies received charters. | April 20. |
| 1607. | Jamestown settled by the London Company.... | May 23. |
| | Plymouth Company began a settlement on Kennebec River..... | Aug. 21. |
| 1608. | Quebec settled by the French, under Champlain... | July 3. |
| 1609. | Virginia received its second charter..... | June 2. |
| | The Hudson River discovered by Henry Hudson.. | Sept. 21. |
| 1610. | "The Starving Time" in Virginia. | |
| 1612. | Virginia received its third charter..... | March 22. |
| 1613. | Pocahontas married to Rolfe..... | April. |
| 1614. | The coast of New England explored by John Smith. | |
| | New York settled by the Dutch. | |
| 1616. | The culture of tobacco commenced in Virginia. | |
| 1620. | Commencement of Negro slavery in the English colonies | Aug. |
| | Charter granted to "The Council of Plymouth," .. | Nov. 3. |
| | Massachusetts settled, at Plymouth..... | Dec. 21. |
| 1621. | Treaty with Massasoit made..... | April 1. |
| 1622. | First Indian massacre in Virginia..... | April 1. |

1623. New Hampshire settled, at Little Harbor and Dover.
1633. Connecticut settled, at Windsor.....Oct.
1634. Maryland settled, at St. Mary's.....April 6.
1636. Rhode Island settled, at Providence.
Harvard College founded.....Oct. 28.
1637. The Pequod War.
1638. Delaware settled, near Wilmington.....April.
1641. New Hampshire settlements united to Massachusetts.
1643. Union of New England colonies formed.....May 29.
1644. Second Indian massacre in Virginia.....April.
1645. Clayborne's Rebellion in Maryland.
1650. North Carolina settled, on the Chowan River.
1651. The "Navigation Act" passed by the British Parliament.
1652. The Maine settlements united to Massachusetts.
1655. Civil War in Maryland.
New Sweden conquered by the Dutch.....Oct.
1663. Carolina granted to Clarendon and others.
1664. New York became an English province.....Sept. 8.
New Jersey settled, at Elizabethtown.
1670. South Carolina settled, on the Ashley River.
1673. Virginia granted to Culpepper and Arlington.
1675. King Philip's War begun, by an attack upon Swanze...
July 4.
1676. Bacon's Rebellion.
1680. Charleston founded.
New Hampshire made a Royal Province.....Sept. 28.
1682. Pennsylvania settled.
Delaware granted by the Duke of York to William
Penn.....Aug. 31.
1686. Andros arrived at Boston as Governor of New England...
Dec. 30.
1689. King William's War commenced. Attack upon Dover....
July 7.
1690. Schenectady burned by the French and Indians...Feb. 8.
Port Royal taken by the English, under Phipps...May.
1692. "Salem Witchcraft" delusion prevailed.
1697. King William's War terminated.....Sept. 20.
1702. Queen Anne's War commenced.
1710. Port Royal, Nova Scotia, captured by the English...Oct. 13.
1713. Queen Anne's War terminated.....April 11.
1729. North and South Carolina became separate provinces....
July
1732. Washington born, in Westmoreland County, Virginia...
Feb. 22.
1733. Georgia settled, at Savannah.....Feb. 12.
1741. "The Negro Plot," in New York.
1744. King George's War begun.
1748. King George's War ended.....Oct. 18.
1745. Louisburg captured by the English.....June 28.
1753. Washington sent with a letter from Dinwiddie...Oct. 31.

- A. D.
 1754. Washington delivered St. Pierre's reply to Dinwiddie...
 Dec. 11.
 The battle of Great Meadows.....May 28.
 Congress of Commissioners met at Albany.....June.
 The battle of Fort Necessity.....July 4.
 1755. French expelled from Nova Scotia by Moncton....June.
 Braddock's defeat at the battle of Monongahela..July 9.
 The British defeat by Dieskau, near Lake George...Sept. 8.
 1756. Great Britain declared war against France.....May 17.
 France declared war against Great Britain.....June 9.
 The French, under Montcalm, captured Oswego...Aug. 14.
 Indians defeated at Kittaning.....Sept. 8.
 1757. Fort William Henry surrendered to Montcalm....Aug. 9.
 The massacre at Fort William Henry.....Aug. 10.
 1758. Lord Howe killed in a skirmish at Ticonderoga...July 6.
 Abercrombie repulsed by Montcalm at Ticonderoga...
 July 8.
 Louisburg taken by Amherst and Wolfe.....July 26.
 Fort Frontenac surrendered to the English.....Aug. 27.
 Grant defeated by Aubry, near Fort Duquesne..Sept. 21.
 1759. Ticonderoga and Crown Point abandoned by the French.
 Niagara surrendered to the English, under Johnson...
 July 25.
 Battle of Montmorenci.....July 31.
 Battle of the Plains of Abraham.....Sept. 13.
 Quebec surrendered to the English.....Sept. 18.
 1760. The French attempted the recovery of Quebec..April 28.
 Montreal and the whole of Canada surrendered to the
 English.....Sept. 8.
 1763. The Peace of Paris between Great Britain and France...
 Feb. 10.
 Florida ceded to Great Britain by Spain.....Feb. 10.
 1765. The Stamp Act passed by the British Parliament....
 March 8.
 A Colonial Congress met in New York.....Oct. 7.
 1766. The Stamp Act repealed by the British Parliament...
 March 18.
 1767. A bill imposing duties on glass, paper &c., passed....
 June 29.
 1768. A body of British troops arrived at Boston.....Sept. 27.
 1770. "The Boston Massacre".....March 5.
 All duties, except on tea, repealed by Parliament...
 April 12.
 1773. The cargoes of tea at Boston thrown overboard..Dec. 16.
 1774. "Boston Port Bill" passed by Parliament.....March.
 "The First Continental Congress" met at Philadelphia..
 Sept. 5.
 1775. The battle of Lexington.....April 19.
 1775. Ticonderoga, New York, captured by Allen and Arnold..
 May 10.

A. D.

1775. Crown Point, New York, captured by the Americans....
 May 12.
 Washington elected commander-in-chief.....June 15.
 The battle of Bunker Hill.....June 17.
 Washington took command of the army.....July 12.
 Montreal surrendered to Montgomery.....Nov. 13.
 Battle of Quebec.....Dec. 31.
1776. Norfolk, Virginia, destroyed by Lord Dunmore...Jan. 1.
 Boston evacuated by the British troops.....March 17.
 The battle of Fort Moultrie, South Carolina....June 28.
 The Declaration of Independence.....July 4.
 The battle of Long Island, New York.....Aug. 27.
 The city of New York abandoned by the Americans..
 Sept. 15.
 The battle of White Plains, New York.....Oct. 28.
 The battle of Fort Washington, New York.....Nov. 16.
 Fort Lee, New Jersey, taken by the British.....Nov. 18.
 Gen. Lee surprised and taken prisoner.....Dec. 13.
 The battle of Trenton, New Jersey.....Dec. 26.
1777. The battle of Princeton, New Jersey.....Jan. 3.
 Tryon's first expedition against Connecticut.....April.
 Meigs's expedition against the British at Sag Harbor..
 May 23.
 Invasion of New York by Burgoyne.....June.
 Ticonderoga abandoned by the Americans.....July 5.
 The battle of Hubbardton, Vermont.....July 7.
 Gen. Prescott captured by Colonel Barton.....July 10.
 Murder of Miss Jane McCrea, near Fort Edward...July 27.
 Fort Schuyler, New York, besieged by St. Leger....Aug.
 The battle of Oriskany, near Fort Schuyler.....Aug. 6.
 The battle of Fort Schuyler.....Aug. 6.
 The battle of Bennington, Vermont.....Aug. 16.
 The battle of Brandywine, Pennsylvania.....Sept. 11.
 The battle of Bemis Heights, or first of Stillwater.....
 Sept. 19.
 The battle of Paoli, Pennsylvania.....Sept. 20.
 Philadelphia entered by the British.....Sept. 26.
 The battle of Germantown, Pennsylvania.....Oct. 4.
 Forts Clinton and Montgomery taken by the British..
 Oct. 6.
 The battle of Saratoga, second of Stillwater.....Oct. 7.
 The surrender of Burgoyne.....Oct. 17.
 The British repulsed at Fort Mercer, New Jersey...Oct. 22.
 The British repulsed at Fort Mifflin, Pennsylvania.Oct. 22.
 Articles of Confederation adopted by Congress....Nov. 15.
 Fort Mifflin abandoned by the Americans.....Nov. 16.
 Washington encamped at Valley Forge, Pennsylvania..
 Dec. 11.
1778. American Independence acknowledged by France....
 b. 6.

A. D.

1778. Treaty of Alliance with France.....Feb. 6.
 British commissioners sent to America.
 Philadelphia evacuated by the British.....June 18.
 The battle of Monmouth, New Jersey.....June 28.
 The battle of Wyoming, Pennsylvania, and massacre...
 July 3.
 The French fleet, under D'Estaing, arrived.....July 11.
 The battle of Rhode Island.....Aug. 29.
 Grey's ravaging expedition to the eastward.....Sept.
 Ferguson's expedition against Egg Harbor.....Oct.
 The massacre at Cherry Valley, New York....Nov. 11, 12.
 The battle of Savannah, Georgia.....Dec. 29.
 1779. Sunbury, Georgia, captured by the British.....Jan. 9.
 The battle of Kettle Creek, Georgia.....Feb. 14.
 The battle of Brier Creek, Georgia.....March 3.
 Tryon's second expedition against Connecticut....March.
 Stony Point, New York, captured by the British. May 31.
 Verplanck's Point, New York, captured by the British...
 June 1.
 War declared against Great Britain by Spain....June 26.
 1779. The battle of Stono Ferry, South Carolina.....June 20.
 Tryon's third expedition against Connecticut....July.
 The battle of Stony Point, New York.....July 15.
 British garrison at Paulus Hook surprised by Lee. July 19.
 The battle of the Penobscot, Maine.....Aug. 13.
 Sullivan's expedition against the Indians.
 "The battle of the Chemung," New York.....Aug. 29.
 Savannah besieged by the French and Americans.....
 Sept., Oct.
 Paul Jones's naval battle off the coast of England. Sept. 23.
 D'Estaing and Lincoln repulsed at Savannah.....Oct. 9.
 1780. Charleston besieged by the British.....April, May.
 The battle of Monk's Corner, South Carolina....April 14.
 Charleston surrendered to the British.....May 12.
 The battle of Waxhaw, South Carolina.....May 29.
 The battle of Springfield, New Jersey.....June 23.
 French fleet arrived at Newport, Rhode Island...July 10.
 The battle of Rocky Mount, South Carolina.....July 30.
 The battle of Hanging Rock, South Carolina.....Aug. 6.
 The battle of Sanders Creek, South Carolina.....Aug. 16.
 The battle of Fishing Creek, South Carolina.....Aug. 18.
 Arnold's treason.
 Andre executed as a spy at Tappan, New York...Oct. 2.
 The battle of King's Mountain, South Carolina...Oct. 7.
 The battle of Fishdam Ford, South Carolina.....Nov. 12.
 The battle of Blackstocks, South Carolina.....Nov. 20.
 1781. Revolt of the Pennsylvania troops.....Jan. 1.
 The battle of the Cowpens, South Carolina.....Jan. 17.
 The revolt of New Jersey troops.....Jan. 18.
 Arnold's depredation in Virginia.....Jan.

A. D.

1781. Cornwallis's pursuit of Morgan and Greene...Jan., Feb.
 Articles of Confederation ratified by the States.
 The battle of Guilford Court-House, North Carolina...
 March 15.
 The battle of Hobkirk's Hill, South Carolina....April 25.
 Siege of Ninety-six by General Greene.....May, June.
 The battle of Ninety-six, South Carolina.....June 18.
 Colonel Hayne executed by the British, at Charleston...
 July 31.
 Arnold's expedition against Connecticut.....Sept.
 The battle of Fort Griswold, Connecticut.....Sept. 6.
 The battle of Eutaw Springs, South Carolina....Sept. 8.
 The siege of Yorktown, Virginia.....Oct.
 The surrender of Cornwallis, at Yorktown....Oct. 19.
 1782. Preliminary articles of peace signed at Paris....Nov. 30.
 1783. Cessation of hostilities proclaimed in the American army.
 April 19.
 Savannah, Georgia, evacuated by the British....July 11.
 Definitive treaty of peace signed at Paris.....Sept. 3.
 American army disbanded by orders of Congress..Nov. 3.
 New York evacuated by the British.....Nov. 25.
 Charleston, South Carolina, evacuated by the British...
 Dec. 14.
 Washington resigns his commission.....Dec. 23.
 1787. Shay's Rebellion, in Massachusetts.
 Constitution of the United States agreed on by
 the convention of delegates at Philadelphia...Sept. 17
 1789. The first Congress under the Constitution met at
 New York.....March 4.
 1790. Harmar defeated by the Indians, in Indiana..Oct. 17, 22.
 1791. United States bank established at Philadelphia.
 Vermont admitted into the Union.....March 4.
 St. Clair defeated by the Indians, in Ohio.....Nov. 4.
 1792. Kentucky admitted into the Union.....June 1.
 1793. The difficulties with France.
 1794. Wayne defeated by the Indians, on the Maumee..Aug. 20.
 "Whiskey Insurrection" in Pennsylvania.
 1795. "Jay's Treaty" with Great Britain ratified.....June 24.
 Treaties with the Western Indians, Spain, and Algiers.
 1796. Tennessee admitted into the Union.....June 1.
 1799. The death of Washington.....Dec. 14.
 1800. The seat of government removed to Washington.
 Treaty of peace concluded with France.....Sept. 30.
 1801. War declared against the United States by Tripoli....
 June 10.
 1802. Ohio admitted into the Union.....Nov. 29.
 1803. Louisiana purchased of France.....April 30.
 Commodore Preble sent against Tripoli.
 1804. The frigate Philadelphia destroyed by Decatur..Feb. 15.
 The duel between Hamilton and Burr.....July 11.

- A. D.
1805. Derne, a Tripolitan city, captured by Eaton....April 27.
Treaty of peace concluded with Tripoli.....June 3.
1806. British blockade from the Elbe to Brest declared..May 16.
Bonaparte issued his "Berlin Decree".....Nov. 21.
1807. British "Orders in Council" prohibited coast trade
with France.....Jan. 7.
American frigate Chesapeake attacked by the Leopard...
June 22.
British armed vessels ordered to leave the
United States.....July.
British "Orders in Council" prohibited all trade
with France and her allies.....Nov. 11.
Aaron Burr tried for treason, and acquitted.....Sept.
Bonaparte issued his "Milan Decree".....Dec. 17.
Embargo on American ships laid by Congress..Dec. 22.
1809. Commerce with Britain and France interdicted
by Congress.....March 1.
1811. Action between the frigate President and Little Belt....
May 16.
Battle of Tippecanoe, Indiana.....Nov. 7.
1812. Louisiana admitted into the Union.....April 8.
War against Great Britain proclaimed by the
United States.....June 19.
Invasion of Canada by General Hull.....July 12.
Surrender of Fort Mackinaw, Michigan.....July 17.
The first battle of Brownstown, Michigan.....Aug. 5.
The second battle of Brownstown.....Aug. 9.
Surrender of Detroit, Michigan, by Gen. Hull.....Aug. 16.
British sloop Alert taken by the frigate Essex.....Aug. 13.
British frigate Guerriere taken by the Constitution....
Aug. 19.
The battle of Queenstown, Canada.....Oct. 13.
British brig Frolic taken by the Wasp.....Oct. 18.
British frigate Macedonian taken by the United
States.....Oct. 25.
British frigate Java taken by the Constitution....Dec. 29.
1813. The battle of Frenchtown, Michigan.....Jan. 22.
British brig Peacock taken by the Hornet.....Feb. 24.
The battle of York, Canada.....April 27.
Fort Meigs, on the Maumee, besieged by Proctor..May 1.
The battle of Fort Meigs, Ohio.....May 5.
Fort George, Canada, taken by the Americans....May 27.
The battle of Sackett's Harbor, New York.....May 29.
American frigate Chesapeake taken by the Shannon...
June 1.
The battle of Fort Stephenson, Ohio.....Aug. 2.
American brig Argus taken by the Pelican.....Aug. 14.
Creek War commenced by the massacre at Fort
Mims.....Aug. 30.
British brig Boxer taken by the Enterprise.....Sept. 5.

- A. D.
1813. Perry's victory on Lake Erie.....Sept. 10.
 The battle of the Thames, Canada.....Oct. 5.
 The battle of Chrysler's Field, Canada.....Nov. 11.
1814. The battle of Tohopeka, the last of the Creek War.....
 March 27.
 American frigate Essex taken by the Phoebe and
 Cherub.....March 28.
 The battle of La Colle Mill, Canada.....March 30.
 British brig Epervier taken by the Peacock.....April 29.
 British sloop Reindeer taken by the American
 sloop Wasp.....June 28.
 Fort Erie captured by the Americans.....July 3.
 The battle of Chippewa, Canada.....July 5.
 The battle of Lundy's Lane, or Bridgewater, Canada.....
 July 25.
 The first battle of Fort Erie, Canada.....Aug. 15.
 The battle of Bladensburg, Maryland.....Aug. 24.
 The city of Washington taken by the British....Aug. 24.
 British sloop Avon taken by the American sloop
 Wasp.....Sept. 1.
 McDonough's victory on Lake Champlain.....Sept. 11.
 The battle of Plattsburg, New York.....Sept. 11.
 The battle of North Point, Maryland.....Sept. 12.
 The battle of Fort McHenry, Maryland.....Sept. 13.
 The battle of Fort Bowyer, Alabama.....Sept. 15.
 The second battle of Fort Erie, Canada.....Sept. 17.
 The British driven from Pensacola by Gen. Jackson.....
 Nov. 7.
 The battle of Lake Borgne, Louisiana.....Dec. 14.
 Hartford Convention.....Dec.
 The battle nine miles from New Orleans.....Dec. 23.
 Treaty of peace between the United States and
 Great Britain.....Dec. 24
1815. The battle of New Orleans.....Jan. 8.
 American frigate President captured by a British
 squadron.....Jan. 15.
 The Cyanne and Levant taken by the Constitution.....Feb. 20.
 The British brig Penguin taken by the Hornet.....March 23.
 War with Algiers declared by Congress.....March.
 Commodore Decatur sent against Algiers.....May.
1816. Bank of United States re-chartered for twenty years....
 April 10.
 Indiana admitted into the Union.....Dec. 11.
1817. Mississippi admitted into the Union.....Dec. 10.
 The Seminoles and Creeks commenced depredations
1818. General Jackson went against the hostile Indians.....March.
 Pensacola seized by General Jackson.....May 24.
 Illinois admitted into the Union.....Dec. 3.
1819. Alabama admitted into the Union.....Dec. 14.
1820. Maine admitted into the Union.....March 15.

- A. D.
 1850. The death of President Taylor.....July 9.
 California admitted into the Union.....Sept. 9.
 1853. Franklin Pierce inaugurated President.....March 4.
 1854. "Kansas-Nebraska Bill" passed.....June.
 1857. James Buchanan inaugurated President.....March 4.
 1858. Minnesota admitted into the Union.....May 11.
 1859. Oregon admitted into the Union.....Feb. 14.
 John Brown's raid into Virginia.....Oct. 16.

The following abstract of the important events of the late Civil War may be depended upon as being as nearly reliable as can be compiled:

1860.
 Nov. 10. Bill to equip and raise 10,000 volunteers introduced in South Carolina Legislature.
 Nov. 18. Georgia Legislature voted one million dollars to arm the State.
 Nov. 20-23. Specie payment suspended by banks in Richmond, Baltimore, Washington, Philadelphia, and Trenton, and generally through the South.
 Nov. 20. Secession ordinance passed by South Carolina.
 Dec. 10. Louisiana Legislature voted half a million dollars to arm the State.
 Dec. 24. Election in Alabama—60,000 majority for secession.
 Dec. 27. Troops ordered out in Charleston.
 1861.
 Secession of Mississippi, Florida, Alabama, Georgia, Louisiana, Texas, Virginia, Arkansas, and North Carolina declared.
 Jan. 9. Steamer "Star of the West," of Charleston, fired into.
 Jan. 18. Virginia Legislature appropriated one million dollars for the defense of the State.
 Jan. 21. Jefferson Davis withdrew from U. S. Senate.
 Jan. 29. Kansas admitted into the Union.
 Jan. 31. U. S. Mint at New Orleans seized by State authorities.
 Feb. 4. "Southern Confederacy" formed at Montgomery, Alabama.
 Feb. 9. Jefferson Davis elected President C. S. A.; inaugurated the 18th.
 U. S. \$25,000,000 loan bill signed by the President.
 March 4. Abraham Lincoln inaugurated President of the U. S.
 March 26. Sam Houston, Governor of Texas, deposed for refusal to take an oath of allegiance to the C. S. A.

Casualties and Events During the Civil War.

Date.	UNION.				CONFED.			
	K.	W.	P.-M.		K.	W.	P.-M.	
APRIL, 1861.								
12 Bombardment of Fort Sumter. No casualties.								
15 Evacuation of Ft. Sumter, S.C.	1		3					
15 President Lincoln calls for 75,000 troops.								
19 Riots in Baltimore, Md.	4	20	....		9			
MAY.								
2 N. Y. 69th Regiment arrived in Washington.								
4 The President issues a second call for troops.								
5 Gen. Butler took possession of Relay House.								
10 Camp Jackson, Mo.								639
10 Riots in St. Louis, Mo.	4	....	....		27			
11 Charleston blockade established.								
17 C. S. Cong. authorized issue of \$50,000,000 8 per cent. 20-year bonds.								
29 President Davis reached Richmond.								
31 Cavalry skirmish at Fairfax C. H., Va.								
JUNE.								
1 Fairfax Court House, Va.	1	4	....		1	14		
3 Phillippi, West Virginia.		2	....			16		
10 Big Bethel, Va.	16	34	....		1	7		
11 *Romney, West Virginia.		1	....		2	1		
14 Confederates evacuate and burn Harper's Ferry, Va.								
17 Vienna, Virginia.	5	6	....		6			
17 *Boonville, Mo.	2	19	....		15	....		20
17 Edward's Ferry, Md.	1	4	15					
18 Camp Cole, Mo.	15	55	4		20			
23 48 B. & O. R. R. locomotives, valued at \$400,000, destroyed by the Confederates.								
26 Patterson Creek, Va.	1	1	....		7	2		
29 General council of war held at Washington.								
JULY.								
2 Falling Waters, Md.	8	15	....		31	50		
4 Meeting of Congress in extra session.								

Date.	UNION.			CONFED.		
	K.	W.	P.-M.	K.	W.	P.-M.
5 *Carthage, or Dry Forks, Mo.	13	31	....	40	125	45
5 Newport News.....	....	6	....	....	6	
5 President Lincoln called for 400,000 men and \$400,000,000 to put down the rebellion.						
6 Middle Creek Fork, W. Va....	1	6	....	7		
7 Great Falls, Va.....	2	....	....	12		
8 Laurel Hill, W. Va.....	2	6				
10 Monroe Station, Mo.....	3	....	....	4	20	75
11 *Rich Mt., Va. (Camp lost and 150 prisoners taken.....	11	35	....	60	140	100
12 Barboursville, or Red House, Va	1	....	....	10		
12 Beverly, W. Va.....	....	....	....	....	600	
14 Carrick's Ford, W. Va.....	13	40	....	20	10	50
16 Millsville, or Wentzville, Mo.	7	1	....	7		
17 Fulton, Mo.....	1	15				
17 Scarrytown, W. Va.....	9	38				
17 Martinsburg, Mo.....	1	1				
17 Bunker Hill, Va.....	....	....	....	4		
18 Blackburn's Ford, Va.....	19	38	....	15	53	
19 Harrisonville and Parkers- ville, Mo.....	1	....	....	14		
20 Confederate Congress meets at Richmond.						
21 §Bull Run, or Manassas, Va.	481	1011	1460	269	1483	
22 Forsyth, Mo.....	....	3	....	5	10	
24 Blue Mills, Mo.....	1	12				
26 Lane's Prairie, near Rolla, Mo.	....	3	....	1	3	
27 Ft. Fillmore, New Mexico....	....	420				

AUGUST.

2 Dug Springs, Mo.....	4	37	....	40	44	
3 Messilla, New Mexico.....	3	6	....	12		
5 Athens, Mo.....	3	8	....	14	14	
5 Point of Rocks, Md.....	....	....	....	3	2	
7 Hampton, Va.....	....	....	....	3	6	
8 *Lovettsville, Va.....	....	....	....	1	5	
10 *Wilson's Creek, Mo. (Gen. Lyon killed.).....	223	721	291	205	800	30
11 Potosi, Mo.....	1	....	....	2	3	
14 Martial law declared at St. Louis, Mo.						
17 Brunswick, Mo.....	1	7				
19 Charleston, or Bird's Pt., Mo..	1	6	....	40		
20 *Hawk's Nest, W. Va.....	....	3	....	1	3	
26 Cross Lanes, or Somerville, W. Va.....	5	40	200			
27 Ball's Cross Roads, Va.....	1	2				

Date.	AUGUST, 1861.			UNION.		CONFED.	
	K.	W.	P.-M.	K.	W.	P.-M.	
28 *Ft. Hatteras, N. C.....	1	2	....	5	51	715
29 Forts Hatteras and Black, N. C., captured.							
29 Lexington, Mo.....	....	....	....	8		
31 Munson's Hill, Va.....	2	2					

SEPTEMBER.

1 Bennett's Mills, Mo.....	1	8				
1 Boone Court House, W. Va..	....	6	....	30		
2 Dallas, Mo.....	2					
2 Dry Wood, or Ft. Scott, Mo..	4	9				
2 Beher's Mills, Mo.....				3	5	
6 Paducah, Ky., occupied by Union forces.						
10 Carnifex Ferry.....	16	102				
11 Lewinsville, Va.....	6	8				
12 Black River, ne'r Ironton, Mo. ....	....	....	....	5		
13 Cheat Mountain, W. Va.....	9	12	....	....	80	
13 Booneville, Mo.....	1	4	....	12	30	
14 Confed. privateer Judah de- stroy'd near Pensacola, Fla.	3	15				
15 Pritchard's Mills, Va.....	1	....	....	8	75	
12-20. §Lexington, Mo.....	42	108	1624	25	75	
17 Morristown, Mo.....	2	6	....	7		
17 Blue Hills, Mo.....	11	39	....	10	60	
18 Banks of New Orleans sus- pend specie payment.						
18 Barboursville, W. Va.....	1	1	....	7		
20 Confederates take Lexington, Mo.						
21 §Ball's Bluff, Va. (Col. Ba- ker killed.).....	220	266	500	36	264	2
22 Poppinsville, or Osceola, Mo.	17					
22 Elliott's Mills, Mo.....	1	5				
23 *Romney, or Hanging Rock, W. Va.....	3	50	....	35		
25 Chapmansville, W. Va.....	4	9	....	20	50	
26 Lucas Bend, Ky.....	....	....	....	4		
29 Munson's Hill.....	9	25				

OCTOBER.

3 Grienbrier, W. Va.....	8	32	....	100	75	
4 Ft. Craig, New Mexico.....	....	....	....	11	50	
4 Buffalo Hill, Ky.....	20	....	....	50		
8 Hillsboro, Ky.....	3	2	....	11	29	
9 Santa Rosa, Fla.....	14	29	....	....	350	
12 Cameron, Mo.....	1	4	....	8		
12 Upton Hill, Ky.....	....	....	....	5	3	
12 Bayles Crossroads, La.....	....	4				
13 Beckwith Farm, Mo.....	2	5	....	1	2	
13 West Glaze, Mo.....	....	....	....	62		

Date.	UNION.			CONFED.		
	K.	W.	P.-M.	K.	W.	P.-M.
15 Big River Bridge, near Potosi, Mo.....	1	6	33	5	4	
15 Lime Creek, Mo.....	....	....	....	63	40	
16 Bolivar Heights, Mo.....	4	7				
16 Warsaw, Mo.....	....	....	....	3		
17-21. Frederickstown and Iron-ton, Mo.....	6	60	....	....	200	
19 Big Hurricane Creek, Mo....	2	14	....	14		
21 Bell's Bluff; called Edwards Ferry, or Harrison's Land-ing, Va.....	223	226	445	36	264	
22 Buffalo Mills, Mo.....	....	....	....	17		
23 West Liberty, Ky.....	....	2	....	10	5	
23 Hodgeville, Ky.....	....	3	....	3	5	
25 Zagonyi's ch'ge, Spring'd, Mo.	18	37	....	100		
26 Romney, or Mill Cre'k, W. Va.	2	15	....	20	15	50
26 Saratoga, Ky.....	....	4	....	8	17	
27 Plattsburg, Mo.....	....	....	....	8		
27 Spring Hill, Mo.....	....	5				
29 Woodbury and Morgant'n, Ky. ....	....	1				

NOVEMBER.

1 Winfield Scott, Com. U. S. army, retired, and Maj.-Gen. Geo. B. McClellan, appointed.						
1 Renick, Randolph Co., Mo....	....	14				
6 Little Santa Fe, Mo.....	2	6				
7 *Belmont, Mo.....	90	173	235	261	427	378
7 Galveston Harbor, Tex.....	1	8	....	....	3	
7 Port Royal, S. C.....	8	23	....	11	39	
7 Capture of Port Royal entrance by Union fleet.						
8 Mason and Slidell taken from an English steamer.						
9 *Piketown, or Fry Mt., Ky. (70 wagons, stores, and equipages.)	4	26	....	18	45	200
10 Guyandotte, W. Va.....	7	20	....	3	10	
10 Gauley Bridge, W. Va.....	2	16				
11 Little Blue, Mo.....	7	9				
12 Occoguan Creek, Va.....	3	1				
17 Cypress Bridge, Ky.....	10	15				
18 Palmyra, Mo.....	....	....	....	3		
19 Wirt Court House, W. Va....	....	....	....	1	5	
19 Eng. packet Trent boarded by Capt. Wilkes, and Mason and Slidell captured. On the 24th inst. they were						

PERPETUAL CALENDAR.

77

Date.	UNION.				CONFED.			
	K.	W.	P.-M.		K.	W.	P.-M.	
NOVEMBER, 1861.								
placed in Ft. Warren, Boston Harbor; released Jan. 1, 1862, on a demand of the British government.								
23 Ft. Pickens, Pensacola, Fla..	5	7	....		5			23
24 Lancaster, Mo.....	1	2	....		13			
26 Little Blue, Mo.....	1	1						
26 Drainesville, Va.....	....	....	....		2			
29 Black Walnut Creek, Mo....	....	15	....		17			
DECEMBER.								
3 Salem, Mo.....	6	10	....		16			20
3 Vienna, Va.....	....	....	....		1			
4 Anandale, Va.....	1	....	....		17			
4 Dunksburg, Mo.; citizens repulse raiders.....	....	....	....		7			10
9 Congress passed bill authorizing exchange of prisoners.								
10 Shelling of Free Stone Point by Union gunboats.								
11 Bertrand, Mo.								
13 Camp Allegheny, or Buffalo Mt., W. Va.....	20	107	....		20			96
17 Rowlett's Station, Ky.....	10	22	....		33			50
18 *Milford, Blackwater, Mo....	2	8	....		....			1300
20 Drainsville, Va.....	7	61	....		43			143
21 Hudson, Mo.....	....	5	....		10			
22 Wadesburg, Mo.....	....	2						
28 Sacramento, Ky.....	1	8	....		30			
28 Mt. Zion, Mo.....	5	63	....		25			150
30 Banks of New York, Philadelphia, Albany, and Boston suspend specie payment.								
JANUARY, 1862.								
1 Port Royal, S. C.....	1	10						
4 Huntersville, Va.....	....	1	....		1			7
4 Near Bath, Va.....	2	2	....		....			30
4 Calhoun, Mo.....	....	10	....		....			30
7 Blue Gap, near Romney, Va..	....	....	....		15			
7 Jennie's Creek, Ky.....	3	1	....		6			14
8 Charleston, Mo.....	8	16						
8 Dry Forks, W. Va.....	....	6	....		6			
8 Silver Creek, Mo.....	5	6	....		....			80
9 Columbus, Mo.....	5							
10 Middle Creek, Ky.....	2	25	....		40			
19-20 *Mill Springs, Ky. (Gen. Zolicoffer killed.).....	38	194	....		100			160
22 Knob Noster, Mo.....	1							
29 Occoguan Bridge, Mo.....	1	4	....		10			

Date.	FEBRUARY, 1862.	UNION.		CONFED.	
		K.	W. P.-M.	K.	W. P.-M.
1	Bowling Green, Ky.....	3	2		
6	Fort Henry, Tenn.....	....	40	5	11
6	Fort Henry, Tenn., captured by Union fleet.				
8	Linn Creek, Va.....	1	1	8	7
8	Roanoke Island, N. C., sur- rendered to Federal army..	35	200	16	39 2527
10	Elizabeth City, N. C.....	3			
13	Blooming Gap., Va.....	2	5	13	
14	Flat Lick Fords, Ky.....	....	....	4	4
14-15, 16.	*Ft. Donnelson, Tenn. (6 forts, 65 guns, and 17,- 500 small arms captured, and 13,829 Conf. w. and m..	446	1735 150	231	1007
17	Pea Ridge, Mo.....	5	9		
18	Independence, Mo.....	1	3	4	5
21	Ft. Craig, New Mexico.....	62	140 ....	....	150
24	Mason's Neck, Va.....	2	1		
26	Keytersville, Mo.....	2	1	1	
MARCH.					
2	Pittsburg Landing, Tenn....	5	5	20	200
3	New Madrid, Mo.....	1	3		
5	Occoguan, Va.....	2	2		
6-7, 8.	*Pea Ridge, Ark.....	203	972 174 1100	2500	1600
7	Fox Creek, Mo.....	....	5		
8	Near Nashville, Tenn.....	1	2	4	
8	U. S. vessels Congress & Cum- berland sunk by Merrimac. Next day engagement be- tween the Monitor and the Merrimac.				
9	Mountain Grove, Mo.....	10	2		
9	Hampton Roads, Va.....	261	108	7	17
10	Burke's Station, Va.....	1	....	3	5
10	Jacks'b'o, Big Cr'k Gap, Tenn. ....	....	2	2	4
11	Paris, Tenn.....	5	5 ....	....	10
12	Lexington, Mo.....	1	1	9	3
12	Near Lebanon, Mo.....	....	....	13	5
13	New Madrid, Mo.....	....	50 ....	....	100
14	Newberne, N. C., captured by Union Troops.....	91	466	64	106 413
16	Black Jack Forest, Tenn....	....	4		
18	Salem, or Spring River, Ark..	5	10	100	
21	Mosquito Inlet, Fla.....	8	8		
22	Independence, Mo.....	1	2	7	
23	Carthage, Mo.....	....	1		
23	*Winchester, Va. (Gens. Mc- Intosh, McCulloch and Slack killed.....	103	440 24	80	342 269

Date.	MARCH, 1863.	UNION.			CONFED.		
		K.	W.	P.-M.	K.	W.	P.-M.
26	Warrensburg, Mo.....	1	22	....	9	17	
26	Humonsville, Mo.....	....	5	....	....	15	
26-27, 28.	Near Santa Fe, N. M..	32	75	35	36	60	93
28	Warrensburg, Mo.....	3	1	....	15		

APRIL.

2	Putnam's Ferry, Mo.....	....	....	....	3		
4	Great Bethel, Va.....	4	10				
4	Crump's Landing, Tenn.....	....	2	....	....	20	
6-7.	*Shiloh, or Pittsburg Land- ing Tenn.....	1735	7882	3950	1728	8012	959
8	*Island No. 10, Tenn. (6 forts captured.) .....	....	....	....	17	....	6000
8	Near Corinth, Miss.....	....	....	....	15	25	200
9	Owens River, Cal.....	1	2				
10	Fort Pulaski, Ga., captured by Union fleet.....	1	....	....	....	4	360
11	Huntsville, Ala.....	....	....	....	....	....	200
11	Yorktown, Va.....	2	8				
12	Little Blue River, Mo.....	....	....	....	5		
12	Monterey, Va.....	....	3				
14	Pollocksville, N. C.....	....	....	....	....	7	
14	Diamond Grove, Mo.....	....	1				
14	Walkersville, Mo.....	2	3				
14	Monta Vallo, Mo.....	2	6	....	2	10	
15	Pechach's Pass, Ariz.....	3	3				
16	Savannah, Tenn.....	....	....	....	5	65	
16	Wilmington Island, Ga.....	10	35	....	5	7	
16	Lee's Mills, Va.....	35	129	....	20	75	50
17	Holly River, W. Va.....	....	3	....	2		
18	Falmouth, Va.....	5	16	....	....	....	19
18	Edisto Island, S. C.....	....	3				
18-28.	Fts. Jackson and St. Phil- ip and the capture of New Orl'ns, La., by Union forces.	36	192	....	185	197	400
19	Talbot's Ferry, Ark.....	1	....	....	3		
19	Camden, N. C.....	12	98	....	6	19	
23	Grass Lick, W. Va.....	3					
25	Ft. Macon, N. C.....	1	11	....	7	18	450
26	Turnback Creek, Mo.....	1					
26	Neosha, Mo.....	3	2	....	....	30	62
26	Com. Farragut demanded the surrender of New Orleans.						
26	In front of Yorktown, Va...	3	16				
27	Norton's Mills, N. C.....	1	6	....	....	3	
28	Paint Rock R. R. B'dge, Tenn.	7					
28	Cumberland Mountain, Tenn.						
28	Monterey, Tenn.....	1	3	....	5		
29	Bridgeport, Ala.....	....	....	....	72	....	350

Date.	MAY, 1862.				UNION.			CONFED.		
	K.	W.	P.	M.	K.	W.	P.	M.		
1 New Orleans captured by Union soldiers.										
1 Clarke's Hollow, W. Va.....	1	21								
3 Farmington, Miss.....	2	12	....					30		
4 Licking, Mo.....	1	2								
4 Cheese Cake Church, Va.										
5 Lebanon, Tenn.....	6	25	....					....	....	66
5 Lock Ridge Mills, Ky.....	4	16	68							
5 *Williamsburg, Va.....	450	1400	372	1000						
7 West Point, Va.....	40	104	41							
7 Somerville Heights, Va.....	2	7	24							
8 McDowell or Bull Past're, Va.	28	225	....					100	200	
8 Corinth, Miss.....	1	4	....					30		
9 Elk Station, Ala.....	5	....	43	16						
9 New Kent C. H., Va.....	4	3	....	10	14					
10 Port Pillow, Tenn.....	....	3	....	2	1					
10 Sur. Norfolk, Va., to Un. forces.										
10 Gen. Butler captured \$800,000 in gold at New Orleans.										
11 Bloomfield, Mo.....	....	....	1							
13 Monterey, Tenn.....	....	2	....		2	3				
15 Linden, Va.....	1	3	14							
15 Fort Darling, James Riv., Va.	12	14	....		7	8				
15 Clalk Bluff, Mo.....	1	3								
15 Butler, Bates Co., Mo.....	3	1								
15-18. Princeton, West Va.....	30	70	....		2	14				
17 Corinth, Miss.....	10	39	....	12						
19 Searcy Landing Ark.....	18	17	....	150						
19 Clinton, N. C.....	....	5	....	9						
21 Phillips Creek, Miss.....	....	3								
22 Florida, Mo.....	....	2								
22 Near Newberne, N. C.....	3	8								
23 Louisburg, Va.....	14	60	....	40	60	100				
23 Front Royal, Va.....	32	122	750							
23 Backton Station, Va.....	2	6	....	12						
23 Ft. Craig, New Mexico.....	....	3								
24 New Bridge, Va.....	1	10	....	60	....	27				
24 Chickahominy, Va.....	2	4								
25 Winchester, Va. (Fed. ret'd).	38	155	711							
27 Hanover Court House, Va....	53	344	....	200	....	730				
27 Big Indian Creek, Ark.....	....	3	....	5	25					
27 Osecola, Mo.....	3	2								
28 Wardensville, Va.....	....	....	....	2	3					
29 Pocotaligo, S. C.....	2	9								
30 Booneville, Miss.....	....	....	....	....	2000					
30 Front Royal, Va.....	5	8	....	....	156					
30 Corinth, Miss. (Conf. retr't.)										
31 Neosho, Mo.....	2	3								
31 Near Washington, N. C.....	1	3	2					

PERPETUAL CALENDAR.

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Date.	JUNE, 1862.			UNION.			CONFED.		
	K.	W.	P.-M.	K.	W.	P.-M.	K.	W.	P.-M.
1 §SevenPines and Fair Oaks Va	800	3627	1222	2800	3807	1300			
2 Strasburg, Va.....		2							
3 Legare's Point, S. C.....		5							
4 Jasper, Tenn.....	2	7	....	20	20				
4 Blackand, Miss.....	5	14							
5 Tranter's Creek, N. C.....	7	11							
6 Memphis, Tenn. (Memphis surrenders to Union forces.				80	80	100			
6 Harrisburg, Va.....		63		17	50				
8 §Cross Keys, Va.....	125	500		42	230				
9 §Port Republic, Va.....	67	364	574	88	335	34			
10 James Island, S. C.....	3	13	....	17	30				
11 Monterey, Ky.....	2					100			
12 Waddell's Farm, Ark.....	12			28					
13 Old Church, Va.....				1					
13 James Island, S. C.....	3	19	....	19	6				
14 Turnstall Station, Va.....	4	8							
16 Ft. Johnson, James Isl., S. C..	85	472	128	51	144				
17 St. Charles, Ark.....	105	30	....		155				
17 Warrensburg, Mo.....	2	2							
17 Smithville, Ark.....	2	4	....		4	15			
18 Williamsburg Road, Va.....	7	57	....	5	9				
21 Battle Creek, Tenn.....	4	3							
22 Raceland, La.....	3	8							
23 Raytown, Mo.....	1	1							
25 Oak Grove, Va.....	51	401	64	65	495	11			
25 Germantown, Tenn.....	10								
25 Little Red River, Ark.....		2							
26 *Chickahominy, Va.....	80	150	....	1000					
27 §Gains Mills, Va.....	7500	k w & m		7500	k w & m				
26-29. U. S. fleet under Com. Far- ragut; no casualties rec'r'd.									
26 to July 1. *Malvern Hill, Va.	1000	k w & m		5000	k w & m				
President Lincoln calls for 300,000 men. The seven days' retreat of the Army of the Potomac under Gen. Geo. B. McClellan; to- tal casualties in the various engagements were:									
1st corps.....	253	1240	1581						
2d corps.....	187	1076	848						
3d corps.....	189	1051	833						
4th corps.....	69	507	201						
5th corps.....	620	2460	1198						
6th corps.....	245	1313	1179						
Engineer's corps.....		2	21						
Total	1582	7709	5958						

Date.	JUNE, 1862.		UNION.		CONFED.	
	K.	W. P.-M.	K.	W. P.-M.	K.	W. P.-M.
Total casualties in Confed.						
divisions were 14,011 w....	2820	.....	752

JULY.

1 Booneville, Miss.....	45	....	....	17	65	
1 Morning Sun, Texas.....	....	4	....	11	26	
3 Elvington Heights, Va.....	8	32	....	100		
6 Grand Prairie, Ark.....	1	21	....	84		
7 Bayou Cache, La.....	7	57	....	110	200	
8 Black River, Mo.....	1	3				
9 Hamilton, N. C.....	1	20				
9 Aberdeen, Ark.						
9 Thompkinsville, Ky.....	4	6	....	10		
11 Williamsburg, Va.....	....	....	....	3		
11 Pleasant Hill, Mo.....	10	19	....	6	5	
12 Lebanon, Ky. (Morgan's raid)	2	....	65			
12 Near Culpepper, Va.....	....	....	....	1	5	
13 Murfreesboro, Tenn.....	33	62	800	50	100	
14 Batesville, Ark.....	1	4				
15 Apache Pass., Ariz.....	....	1				
15 Fayetteville, Ark.....	....	....	....	....	150	
15 Decatur, Tenn.....	....	4				
17 Cynthiaana, Ky. Morg'n's raid.						
Postage stamps made legal						
tender	17	34	....	8	29	
18 Memphis, Mo.....	13	35	....	23		
18 Guerilla campaign in Mo.to						
Sept. 20. (Morgan's guer-						
rillas scattered).....	77	156	347	500	1800	560
23 Florida, Mo.....	....	22	....	3		
23 Columbus, Mo.....	....	2				
24 Trinity, Ala.....	2	11	....	12	30	
24 Near Florida, Mo.....	1	2	....	1	12	
25 Courtland Bridge, Mo.....	....	....	100			
26 Young's Crossroads, N. C....	....	7	....	4	13	
28 Moore's Mills, Mo.....	19	21	....	30	100	
29 Brownsville, Tenn.....	4	6	....	4	6	
30 Paris, Ky.....	....	....	....	27	39	
31 Coggin's Point, Va.....	10	15	....	10	6	

AUGUST.

1 Newark, Mo.....	4	4	60	73		
2 Orange Court House, Va....	4	12	....	12	....	58
2 Clear Creek, Mo.....	5	14	....	11		
3 Languelle Ferry, Ark.....	17	38				
4 President Lincoln ordered						
300,000 men to be drafted.						
4 Sparta, Tenn.....	....	....	....	....	10	23
5 *Baton Rouge, La. (Gen. Wil-						
liams killed.).....	82	255	34	84	316	76

Date.	AUGUST, 1862.	UNION.			CONFED.		
		K.	W.	P.-M.	K.	W.	P. M.
5	Malvern Hill, Va.....	3	11	....	....	....	100
6	Kirksville, Mo.....	28	60	....	128	200	
6	Thornburg, Va.....	2	12	72			
6	Tazewell, Tenn.....	3	23	50	9	40	
7	Trenton, Tenn.....	....	....	....	30	20	
9	Stockton, Mo.....	....	....	....	13	36	
9	*Cedar Mountain, Va. (Conf. repulsed.)	450	660	290	229	1047	31
9	Nucces River, Tex.....	40	....	....	8	14	
10	to 13. Grand River skirmishes, Mo. Total.....	100					
11	Independence, Mo.....	14	18	312			
12	Gallatin, Tenn.....	30	50	200	6	18	
13	Clarendon, Ark.....	....	....	....	....	....	700
15	Merriweather's Ferry, Tenn..	3	6	....	20		
16	Lone Jack, Mo.....	60	100	....	110		
19	Clarksville, Tenn.....	....	....	200			
20	Edgefield Junction, Tenn....	8	18				
22	*Gallatin, Tenn. (Gen. Johnson captured.)	64	100	200	110	k & w	
23	Big Hill, Madison Co., Ky....	10	40	....	25		
23	Waterloo Bridge, Va.....	....	....	....	37	94	
23	Pope's campaign in Va., to Sept. 1. Army of Virginia.	7000	....	....	1500	....	8000
25-26.	Ft. Donnelson, Tenn....	31	....	....	30		
27	*Bull Run & Bettie Run, Va..	300	....	....	300	....	1000
28-29.	*Groverton and Gainesville, Va. Army of Potomac losses in all corps.....	7000	....	....	12000	k w & m	
29	Manchester, Tenn.....	....	....	....	100		
30	§Second Battle of Bull Run, or Manassas, Va.....	800	4000	3000	700	3000	
30	Bolivar, Tenn.....	5	18	64	100		
30	§Richmond, Ky.....	200	700	4000	250	500	
31	Medow Station, Tenn.....	3	13	43			
SEPTEMBER.							
1	Britton's Lane, Tenn.....	5	51	52	179	100	
1	§Chantilly, Va. McDowell's corps, Hooker and Kearney's Div. of 3d corps, and Reno's corps. (Gens. Kearney and Stearns, Federals, killed.)	1300	....	....	800		
5	Invasion of Maryland by Lee's army.						
6	Washington, N. C.....	8	36	....	30	100	
9	Columbus, Tenn.....	....	....	....	18	45	
10	Cold Water, Miss.....	....	....	....	4	80	
10	Fayetteville, W. Va.....	13	80				

Date.	UNION.			CONFED.		
	K.	W.	P.-M.	K.	W.	P.-M.
12-15. Harper's Ferry, Va. 11583						
Union prisoners taken.....	80	120	....	500		
14 *South Mountain, Md. (Gen. Reno killed.).....	443	1800	....	900	2344	1500
14-16. §Mumfordsville, Ky.....	50	....	3566	715		
15 Harper's Ferry surrenders 11500 Federals.						
17 *Antietam, or Sharpsburg, Md. Total loss in all the corps	2010	9416	1043	3500	16399	6000
19-20. *Iuka, Miss.....	144	598	....	263	692	501
20 Blackford's Ford, Va.....	92	131.	403	33	231	
22 Emancipation Proclamation issued.						
30 Newtonia, Mo.....,.....	50	80	115	220	280	

OCTOBER.

1 Shepherdstown, Va.....	....	12	....	60		
3-4. Corinth, Miss.....	315	1812	232	1423	5692	2248
5 Metamora, Miss.....	500	....	....	400		
7 La Vergne, Tenn.....	3	9	....	80	....	175
8 *Perryville, Ky.....	916	2943	489	2500		
10 Harrodsburg, Ky.....	....	....	....	....	....	1600
17 Lexington, Ky.....	4	24	350			
18 Morgan, the raider dashed into Lexington and captured 125 prisoners.						
22 Maysville, Ark.						
22 Pocotaligo, S. C.....	43	258	....	14	102	

NOVEMBER.

1 Artillery fight at Philm't, Va.						
3 Reconnoissance at the base of Blue Ridge Mts. Confederates literally driven into the river and drowned by scores.						
3 Harrisonville, Mo.....	10	3	....	6	20	
4 Galveston, Tex., surrendered.						
5 Nashville, Tenn.....	....	26	....	....	....	23
6 Garretsburg, Ky.....	....	....	....	17	85	
7 Big Beaver Creek, Mo.....	....	....	300			
8 Hudsonville, Miss.....	....	....	....	16	....	185
21 Gen. Sumner demands surrender of Fredericksburg, Va.						
24 Beaver Creek, Mo.....	6	10	....	5	20	
28 Crane Hill, Boonesboro, Ark.	4	36	....	75	300	
28 Hartwood Church, Va.....	4	9	200			

Date.	DECEMBER, 1862.	UNION.			CONFED.		
		K.	W.	P.-M.	K.	W.	P.-M.
4	Winchester, Va., captured by Union soldiers.						
5	Coffeeville, Miss.....	10	54	....	7	43	
7	Fayetteville, Ark.....	167	798	183	300	1200	
7	Hartsville, Tenn.....	55	....	1800	21	114	
9	Dobbin's Ferry, Tenn.....	5	48				
12-18.	Goldsboro expedit'n, N. C.	90	478	....	71	268	400
13	§Frederickburg, Va., Army of the Potomac.....	1180	9028	2145	579	3870	127
14	Kingston, N. C.....	40	120	....	50	75	400
18	Lexington, Tenn.....	7	10	124	7	28	
20	Holly Springs, Miss.....	....	....	1000			
21	Davis Mills, Miss.....	....	3	....	22	50	
28-29.	§Chicasaw Bayou, Vicksburg	191	982	756	....	207	
30	Red Mound, Tenn.....	23	139	58	50	150	300
JANUARY, 1863.							
1	The President's Emancipation Proclamation issued.						
1	*Murfreesboro or Stone river, Tenn., Army of Cumberl'd.	1533	7245	2800	1456		
1	Galveston, Tex.....	600	....	....	50		
8	Springfield, Mo.....	14	144	....	4	200	
11	Ft. Hindman, Ark., captured by Union forces.....	129	831	....	100	400	5000
FEBRUARY.							
3	Ft. Donnelson, Tenn.....	16	60	50	140	400	130
MARCH.							
5	Spring Hill and Unionville, Tenn.	100	300	1306	150	450	
14	Port Hudson, La.....	....	65				
17	Kelly's Ford, Va.....	9	35	....	11	88	
20	Vaught's Hill, Tenn.....	7	48	....	63	300	
30	Dutton's Hill, or Som'set, Ky.	10	25	....	200		
APRIL.							
7	Bombardment of Ft. Sumter, by So. Atlantic squadron..	2	20	....	4	10	
10	Franklin and Harpeth River, Tenn	100	....	....	19	35	85
12-14.	Irish Bend, or Indian Ridge, La.....	350	....	....	....	400	2000
16	Siege of Suffolk, Va.....	44	202	....	500	....	400
26	Cape Girardeau, Mo.....	6	6	....	60	275	
27	Streight's raid from Tuscum-bia, Ala., to Rome, Ga.....	12	69	1466			
29	Fairmount, W. Va.....	1	6	....	100		
30	Spottsylvania Ct. House, Va..	58					

Date.	MAY, 1863.			UNION.			CONFED.		
				K.	W.	P.-M.	K.	W.	P.-M.
1 Port Gibson, Miss.....	130	718	....	1150	....	500			
1 La Grange, Ark.....	2000	k	w & m						
1-4. *Chancellorsville, Va.....	1512	9518	5000	1581	8700	2000			
2 ‡Fredericksburg, Va.....	2000								
11 Horse Shoe Bend, Ky.....	10	20	40	100					
12 Raymond, Miss.....	60	341	....	909					
14 Jackson, Miss. (Union vic'y.)	40	240	....	450					
16 *Champion Hills, Miss. (20 cannon captured.).....	426	1842	189	2500	....	1800			
17 *Big Black River, Miss. (17 cannon captured.).....	29	242	....	600	....	2500			
18 to 22. ‡Siege of Vicksburg, by Gen. Grant and Porter's gunboat fleet. (31,277 Con. killed, wounded and miss- ing)	545	3688	303						
27 to July 9. Siege of Port Hud- son, La.....	500	2500	....	100	700	6408			

JUNE.

Second invasion of Maryland
by Lee's Army.

4 Franklin, Tenn.....	25	....	....	200					
6-8. *Milliken's Bend, La. Col- ored regiments. No quar- ters shown.....	154	223	115	125	400	200			
9 Monticello & Rocky Gap, Ky.	4	26	....	20	80				
9 Beverly Ford and Brandy Sta- tion, Va. Cavalry fight....	500	....	....	700					
13-15. *Winchester, Va.....	3000	....	....	850					
14 Martinsburg, Va.....	....	....	200	1	2				
17 Aldie, Va. Kilpatrick's cav'ly.	24	41	89	....	100				
20 West Virginia admitted into the Union.									
20-21. La Forche Crossing, La..	8	40	....	53	150				
21 Upperville, Va.....	....	94	....	20	100	60			
23 Brashearn City, La.....	46	40	300	3	18				
23 to 30. *Rosenkranz's cam- paign from Murfreesboro to Tallahoma, Tenn.....	85	462	....	1634					
28 Donaldsonville, La.....	....	....	....	39	112	150			
30 Hanover, Penn.....	12	43	....	....	75	60			

JULY.

1-3. *Gettysburg, Pa. Army of
the Potomac. Decisive bat-
tle of the war.....

2834	13709	6643	3500	14500	13621				
1-26. Morgan's raid into Ken- tucky, Indiana and Ohio...	22	80	790	86	385	3000			

PERPETUAL CALENDAR.

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Date.	UNION.			CONFED.		
	K.	W.	P.-M.	K.	W.	P.-M.
JULY, 1863.						
4 *Helena, Ark.....	57	117	32	173	687	776
4 Vicksburg surrenders to Union forces.						
4-5. *Bolton and Birdway Ferry, Miss. (Rear guard of Johnston's army.).....						2000
5 Smithburg, Md.....	30			30		100
5 Lebanon, Ky.....	9	15	400	3	6	
8 Port Hudson surrenders to Union forces						5500
9-16. §Jackson, Miss.....	100	800	100	71	504	764
10 to Sept. 6. Siege of Fort Wagner, Morris Island, S. C....	1757			501		
13 Yazoo City, Miss.....						250
13 Donaldsonville, La.....	450					
13-15. Draft riots in N. Y. City.	1000					
14 Falling Waters, Md.....	29	36		125		1500
14 *Bristow Station, Va.....	51	329		1200		800
16 Sheppardtown, Va.....				25	75	
17 Honey Springs, Indian Terr..	17	60		150	400	
17 Wytheville, W. Va.....	17	61		75		125
21-23. Manassas Gap and Chester Gap, Va.....	35	102		300		
21 Morgan defeated near Kyger's creek, Ohio, and captured near New Lisbon, Ohio, July 26.						

AUGUST.

1-3. Rappahannock Stati'n, Va.	16	134				
3 Jacksonville, La.....	2	2	27			
9 Sparta, Tenn.....	6	25				
20 Lawrence, Kas., burned.						
21 Massacre at Lawrence, Kas..	140	24		40		
26 Rocky Gap, Va.....	16	113		150		
25 to 31. Brownsv'e Bayou, Ark.	13	72				

SEPTEMBER.

6 Fort Wagner, S. C., captured by Union forces.						
8Night attack on Ft. Sumter..	3		114			
9 Cumberland Gap, Tenn.....						2000
13 Culpepper, Va.....	3	40		10	40	75
19-20. Chickamauga, Ga. Army of Cumberland; 13412 Confed. wounded.....	1644	9262	4945	2389		2003
22 Blountsville, Tenn.....	5	22		15	50	100
29 Near Morganzia, La.....	14	40	400			

Date.	OCTOBER, 1863.			UNION.		CONFED.	
	K.	W.	P.-M.	K.	W.	P.-M.	
11 Henderson's Mills, Tenn.....	....	11	....	30		
12-13. Ingham's Mills and Wyatt's, Miss.....	45	....	....	50		
13 Culpepper and White Sulphur Springs, Va.....	8	46					
14 Auburn, Va.....	11	42	....	8	24	
14 Bristol Station, Va.....	51	329	....	750	....	150
15-18. Canton, Brownsville and Clinton, Miss.....	....	....	....	200		
17 President Lincoln calls for 300,000 more men.							
18 Charlestown, W. Va.....	12	13	379				
21 Cherokee Station, Ala.....	7	37	....	40		
25 Pine Bluff, Ark.....	11	27	....	53	164	
26 Cane Creek, Ala.....	2	6	....	10	30	
27 Wauhatchie, Tenn.....	76	339	....	300	1200	

NOVEMBER.

3 Grand Cateau, La.....	26	124	570	60	320	
3-4. Colliersville and Moscow, Tenn.....	7	57	....	....	100	
6 Rogersville, Tenn.....	5	12	650	10	20	
6 Droop Mountain, Va.....	31	94	....	50	250	
7 Rappahannock Station, Va... 370	....	....	....	11	98	1
11 Natchez, Miss.....	4	6	....	4	8	
14 Huff's Ferry, Tenn.....	100					
14 Maysville, Tenn.....	100					
16 Campbell's Station, Tenn....	60	340	....	570		
17 to Dec. 4. Siege of Knoxville, Tenn. Army of the Ohio. (Union victory.).....	20	80	....	80	400	3
23-25. Chattanooga, Tenn., Look-out Mt., and Mis'y Ridge. Army of the Tennessee. (Union victory.).....	757	4529	330	361	2181	614
26-28. Operations at Mine Run, Va. Army of the Potomac.	100	400	....	100	400	
27 Cleveland, Tenn.....	....	....	....	....	....	20
27 *Ringgold and Taylor's Ri'ge, Ga.....	68	351	....	50	200	230

DECEMBER.

10-14. Bean's Sta. and Morris-town, Tenn.....	700	....	....	932	....	150
19 Barran Fork, Ind. Terr.....	....	....	....	50		
28 Charleston, Tenn.....	2	15	8	39	21
30 St. Augustine, Fla.....	4					

JANUARY, 1864.

1 London Heights, Va.....	29	41	4	10	
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Date	JANUARY, 1864.	UNION.			CONFED.		
		K.	W.	P.-M.	K.	W.	P.-M.
3	Jonesville, Va.....	12	48	300	4	12	
13	Mossy Creek, Tenn.....	14		
16-17.	Dandridge, Tenn.....	....	150				
23	Rolling Prairie, Ark.....	11					
24	Taswell, Tenn.....	....	....	....	31		
27	Kelly's Ford, Tenn.....	100	....	....	65		
29	Medley, W. Va.....	10	70	....	....	100	

FEBRUARY.

1	The President orders draft for more men.						
1-3.	Newberne, N. C.....	16	50	250	5	30	
1	to March 8. Yazoo river exp.	35	121	....	35	90	
3	to March 5. Expedition from Vicksb'g to Meridian, Miss.	50	138	105	503	....	212
5	Qualltown, N. C.....	3	6	....	....	....	50
6	Morton's Ford, Va.....	10	201	....	....	....	100
9	Morgan's Mills, Ark.....	1	4	....	65		
10-25.	Smith's raid from Germantown, Tenn., into Miss.	43	267	....	....	50	300
14-15.	Waterproof, La. Col. tr'ps.	8	14	....	15		
20	Olustee or Silver Lake, Fla...	193	1175	400	100	400	
22	Mulberry Gap, Tenn.....	13	....	256			
25-27.	Buzzard Roost, Ga.....	17	272	....	20	120	
28	to March 4. Kilpatrick's raid from Stephensburg to Richmond, Va.....	330	....	....	308		

MARCH.

1	Burton's Ford, Va.....	10	....	....	....	30	
3	Grant created Lieut. General.						
9	Suffolk, Va.....	8	1	....	....	25	
11	Fort de Russy, La., captured by Union troops.						
17	Manchester, Tenn.....	....	....	....	21		
17	Gen. Grant assumes command of all the armies of the U. S.						
21	Henderson Hills, La.....	....	1	....	8	....	250
25	Ft. Anderson, Ky.....	14	46	....	10	40	
26-30.	Longview and Mt. Elba, Ark. (Battle of Cane River Rock, La.....	14	18	....	12	35	300
31	Near Snydersville, Miss.....	16	3	....	3	7	

APRIL.

2	Spooneville, Ark.....	10	33	....	100		
3	Okalona, Ark.....	16	74	....	85		
5	Roseville, Ark.....	19	11	....	15	25	11

Date.	APRIL, 1864.	UNION.			CONFED.		
		K.	W.	P.-M.	K.	W.	P.-M.
7	Wilson's Farm, La.....	14	39	....	15	40	100
8-9.	Sabin Cross Roads and Pleasant Hills, La.....	300	1600	2100	600	204	500
10-13.	Prairie di Ann, Ark.....	100	....	....	50		
12	Pleasant Hill Landing, La....	....	7	....	200		
12	Fort Pillow, Tenn., captured by the Confederates.						
15-16.	Liberty P. O. and occupation of Camden, Ark.....	255					
17 to 20.	§Plymouth, N. C., surrenders to the Confederates.	20	80	1500	500		
18	Poison Springs, Ark.....	113	88	68			
23-24.	Moneti's Bluff, La.....	350	....	....	400		
24	Mark's Mills, Ark.....	100	250	100	110	228	40
30	Jenkin's Ferry, Ark.....	200	955	....	300	300	

MAY.

1-8.	Hudnot's plantation, near Alexandria, La.....	33	87	....	25	100	
5-7.	Battle of the Wilderness, Va. Army of the Potomac.	5597	21463	10677	2000	6000	3400
6	Gen. Sherman begins his Atlanta campaign.						
5-9.	Rocky Face Ridge, Ga. Army of the Cumberland..	200	637	....	600		
6-7.	Chester Station, Va.....	48	250	....	50	200	
8	Todd's Tavern, Va.....	40	150	....	30	150	
8-18.	Spottsylvania, Fredericksburg Road. Army of the Potomac. (2 Conf. generals and 30 guns captured.)	4177	10687	2577	100	5000	3000
9-10.	Swift Creek, Va.....	90	400	....	....	....	500
9-10.	Cloyn's Mountain, Va....	126	585	....	699	....	300
9-13.	Sheridan's cavalry raids in Virginia.....	50	174	200	....	....	100
12-16.	Drury's Bluff, Va.....	422	2383	210	400	2000	100
13-16.	*Resaca, Ga.....	600	2147	....	300	1500	1000
15	Newmarket, Va.....	120	500	240	85	320	
16 to 30.	Bermuda Hundr'd, Va.	200	1000	....	3000		
18	Calhoun Station, La.....	60	300	....	500		
23-27.	North Ann River, Va....	223	1400	290	2000		
25 to June 4.	*Dallas, Ga. Army of the Cumberland.....	2400	....	....	300		
26-29.	Decatur, Ala.....	48	....	....	60		
27-28.	Hanoverton, Va.....	25	119	200	475		
30	Ashland, Va.....	26	130				

JUNE.

1-12.	§Cold Harbor, Va.	10,570					
	Fed. wounded.....	1995	....	2450	1200	....	500

Date.	UNION.			CONFED.		
	K.	W.	P.-M.	K.	W.	P.-M.
JUNE, 1864.						
5 Piedmont, W. Va.....	130	650	....	400	1450	1060
6 Lake Chicot, Ark.....	40	70	....	100		
9 Mount Sterling, Ky.....	35	150	....	50	200	250
9-30. Kenesaw Mountain. Army of the Cumberland.....	1370	6500	800	1100	....	3500
10 Brice's Cross Roads, Miss....	223	394	1623	131	475	
11 Cynthiana, Ky.....	150	....	....	300	....	400
11-12. Thevillian Station, Va..	85	490	160	....	....	370
15 Malvern Hill.....	25	3	....	100		
15-19 *Petersburg, Va. Army of the James.....	1398	7474	1814			
17-18. Lynchburg, Va.....	100	500	100	200		
19 Alabama sunk off Cherbourg, France, by the Kearsage.						
20 to 30. In front Petersburg, Va.	112	506	800			
22-23. Jerusalem Plank road, Va. Army of the Potomac.....	604	2494	2117	....	300	200
22 to 30. \$Wilson's raid on the Weldon railroad, Va.....	92	317	734	365		
23-24. Jones' Bridge, Va.....	54	235	300	250		
25-29. Clarendon, St. Charles riv- er, Ark.....	....	200	....	....	200	200
28 Confederates move on Wash- ington by way of the Shen- andoah Valley, Va.						

JULY.

1 to 31. In front of Petersburg, Va., Deep Bottom, Newmar- ket and Malvern Hill.....	898	4060	3110	400	600	200
2-5. Smyrna, Ga.....	60	310	....	100		
5 Invasion of Maryland by Ear- ly's army.						
3-9. Expedition from Vicks- burg to Jackson, Miss.....	....	150	....	....	200	
5-18. Smith's expedition from La Grange, Tenn., to Tapo- la, Miss.....	85	567	....	110	600	
6-10. Chattahoochee river, Ga. Army of the Ohio.....	80	450	200			
9 Monocacy, Md.....	90	579	1200	....	400	
12 Ft. Stephens, Wash'ton, D. C..	54	319	....	500		
18 The President calls for 500,- 000 volunteers.						
18 Ashby's Gap, Va.....	200					
19-20. Winchester, Va.....	37	175	....	....	300	200
20 *Peachtree Creek, Ga.....	300	1310	....	1113	2500	83
22 *Atlanta, Ga. (McPherson killed.)	500	2141	1000	2482	4000	2017

Date.	UNION.			CONFED.		
	K.	W.	P.-M.	K.	W.	P.-M.
24-25. Kernstown & Winchester.	1200	....	....	600		
26-31. Stoneman's raid to Macon	100	....	990			
26-31. McCook's raid to Love- joy Station, Ga.....	100	500				
28 Atlanta, Ga. Second sortie at Ezra Chapel.....	100	600	....	642	4000	1900
30 Chambersburg, Pa., sacked and burned; explosion of mine and Union repulse at Petersburg.						

AUGUST.

1-31 In front of Petersb'rg, Va.	87	484				
5-23 Ft. Gaines, Mobile Harbor, Ala. (100 drowned by sink- ing of the Tecumseh. 150 guns captured.) Confed- erates defeated.....	75	....	170	....	....	2144
7 Morefield, Va.....	9	22	....	100	....	400
9 Explosion at City Point, Va..	70	130				
14-28. Strawberry Plains, Va....	400	1755	1400	....	1000	
16 Front Royal, Va.....	13	58	....	30	150	300
18 to 21. *Six Mile House, Wel- don R. R. (Railroad cap- tured by Union forces.)....	212	1155	3176	....	2000	2000
21 Summitt Pt., Berryville and Flowing Springs, Va.....	600	....	....	400		
25 Smithville and Kearneysville, Va	20	60	100	300		
25 Ream's Station, Va.....	127	546	1709	1500		
29 Smithfield, Va.....	10	90	....	200		

SEPTEMBER.

1 Jonesboro, Ga.....	1149	....	....	200		
1-8. Rosseau's pursuit of Wheel- er in Tennessee.....	10	30	....	300		
2 *Fall of Atlanta, Ga.....	....	....	....	....	....	200
3-4. Berryville, Va.....	30	182	100	25	100	79
4 Greenville, Tenn.....	....	6	....	10	60	75
16 Sycamore Church, Va.....	400	....	....	50		
19-22. *Winchester and Fisher's Hills, Va. 2d Div. 19th corps under Sheridan. (Con. Gens. Rhodes and Gordon killed.)	693	4033	623	3250	....	3600
23 Athens, Ala.....	....	....	950	5	25	
26-27. *Pilot Knob, or Ironton, Mo	28	56	100	1500		
27 Massacre by Price, Mo.....	122	2				

Date.	SEPTEMBER, 1864.	UNION.			CONFED.		
		K.	W.	P.-M.	K.	W.	P.-M.
28-30.	Newmarket Heights, or Laurel Hill, Va.....	400	2029	....	2000		

OCTOBER.

1	Popular Springs Church, Va..	141	788	1750	....	800	100
2	Waynesboro, Va.....	50					
2	Saltville, Va.....	54	190	104	18	71	21
5	Allatoona, Ga.....	142	352	212	231	500	411
7-13	Darbytown Road, Va.....	105	502	206	1100	....	350
13	Strasburg, Va.....	30	144	40			
13	Dalton, Ga. Troops under Col. Johnson.....	....	....	400			
15	Glasgow, Mo.....	....	400	....	50		
19	*Cedar Creek, Va. (Sheri- dan's ride.).....	588	3516	1891	3000	....	1200
27	*Natcher's Run, Va.....	156	1047	699	206	600	200
27-28.	Fair Oaks, Va.....	120	783	400	60	311	80
28	Confederate ram Albemarle destroyed by torpedo.						
29	Beverly, W. Va.....	8	25	13	17	27	92
30	In front of Petersburg, Va. Army of the Potomac.....	170	820.	812	....	1000	
31	Plymouth, N. C., recaptured by Union troops.						
31	Nevada admit'd to the Union.						

NOVEMBER.

9	Atlanta, Ga.....	....	....	....	20		
12	Newton and Cedar Spring, Va..	....	84	100	....	....	150
13	Ball's Gap, Tenn.....	5	36	2000			
18	Myerstown, Va.....	60	....	....	10		
32	Griswoldville, Ga.....	10	52	....	50	2000	400
26	Saundersonville, Ga.....	....	....	100	....	....	100
26-29.	Sylvan Grove, Ga.....	46	....	....	600		
29-30.	*Spring Hill and Frank- lin, Tenn.....	189	1033	1004	1750	3800	702
30	Honey Hill, or Grahamsville, S. C.....	66	645				

DECEMBER.

1	Stony Creek Station, Va.....	....	40	....	....	....	175
1-14.	*In front of Nashville, Tenn	16	100				
1-31.	In front of Petersburg. Army of the Potomac.....	40	329				
4	Block House No. 7, Tenn.....	....	100	....	100		
5-8.	Murfreesboro, Tenn.....	30	175	....	....	....	197
6-9.	Deveaux's Neck, S. C.....	39	300	200	400		
8-9.	Hatcher's Run, Va.....	125					
10-21.	Siege of Savannah, Ga.....	....	200	....	....	....	800

Date.	UNION.			CONFED.		
	K.	W.	P.-M.	K.	W.	P.-M.
DECEMBER, 1864.						
12-21. Stoneman's raid, Bean's Sta., Tenn., to Saltville, Va.	20	123	....	8	126	500
13 *Ft. McAllister, Ga.....	24	110	....	....	....	250
15-17. Nashville, Tenn.....	400	1740	....	....	....	4462
17 Franklin, Tenn. Wilson's cav. Wounded and sick captured .....	....	....	....	....	....	1800
21 Savannah, Ga., captured by Union army.						
25 §Ft. Fisher, N. C.....	8	38	....	3	55	280
28 Egypt Station, Miss.....	23	88	....	....	....	500

JANUARY, 1865.

2 Franklin, Miss.....	4	9	....	20	30	....
13-15. *Ft. Fisher, N. C., captured by Union forces.....	184	749	....	400	....	2083
16 Explosion of magazine at Ft. Fisher, N. C. (Fort and 72 guns captured.).....	25	66				
25 to Feb. 9. Combahee River, S. C.....	138					
31 Constitutional Amendment abolishing Slavery passed.						

FEBRUARY.

5-7 §Dabney's Mills, Hatcher's Run, Va.....	232	1062	186	1200		
8-14. Williston, Blackville, and Aiken, S. C. Kilpatrick's cavalry .....	....	....	....	200	....	100
10 James Island, S. C.....	20	76	....	20	70	
17 Columbia, S. C., captured by Union troops.						
17 Charleston captured the next day.						
18-22. Ft. Anderson, N. C.....	40	204	....	70	400	875
22 Wilmington, N. C., captured by Union troops.						
27 to March 25. Sheridan's raid in Virginia.....	35	....	....	....	....	1667

MARCH.

8-10 Wilcox Bridge, N. C.....	80	421	600	1500		
16 Averysboro, N. C.....	77	477	....	108	540	217
19-21. *Bentonville, N. C., Kilpatrick's cavalry.....	191	1086	287	267	....	1625
22 to April 24. Wilson's raid from Chickasaw, Ala., to Macon	63	345	63	22	38	6766

Date.	MARCH, 1865.	UNION.			CONFED.		
		K.	W.	P.-M.	K.	W.	P.-M.
25	Ft. Stedman, in front of Petersburg, Va.....	68	337	506	800	....	1881
25	Assault of 2d and 6th corps..	103	864	209	....	....	834
26	to April 9. Siege of Mobile Ala., including Spanish fort and Port Blakely.....	213	1211	....	500	....	2952
29	Quaker Road, Va.....	55	300	....	135	400	100
31	Boydton and White Oak R'ds.	177	1034	556	....	1000	235
31	Dinwiddie Court House, Va..	67	354	....	400		

APRIL.

1	*Five Forks, Va. All of Lee's artillery captured.....	124	706	....	3000	....	5500
2	Fall of Petersburg, Va.....	269	2565	5000	....	....	3000
3	Fall of Richmond. 6,000 Con. prisoners taken, of whom 5,000 were sick and wounded.						
5	Amelia Springs, Va.....	20	96				
6	Sailor's Creek, Va.....	166	1014	....	1000	....	6000
7	Farmville, Va.....	655					
8-9.	Appomattox Court House, Va	200	....	....	500		
9	—Lee surrendered to the Armies of the Potomac and James (Maj.-Gen. Grant), with 26,000 prisoners.						
13	—Mobile surrendered to a combined army and naval attack.						
14	—The flag that Gen. Anderson had lowered at Ft. Sumter was returned to its position.						
14	—President Lincoln was assassinated at Washington. He was shot in the back of the head at Ford's theatre by Wilkes Booth, and died next morning.						
15	—Andrew Johnson, Vice-President, took the oath of office as President.						
17	—Surrender of Mosby to Maj.-Gen. Hancock, with 700 prisoners.						
25	—Wilkes Booth shot in a barn in Virginia and died in twenty-four hours.						
26	—Johnson surrendered to the Armies of the Tennessee, Georgia, and Ohio (Maj.-Gen. Sherman), with 29,924 prisoners.						

EXPLANATION OF MARKS AND ABBREVIATIONS.

- *Federals victorious.
- ‡Confederates victorious.
- k—Killed.
- w—Wounded.
- m—Missing.
- p—Prisoners.

Date.

MAY, 1865.

- 5—Galveston, Tex., surrenders to the Federals.
- 10—Capture of Jefferson Davis at Irwinsville, Ga.
- 10—Surrender of Sam. Jones' command at Tallahassee, Fla., with 8,000 prisoners.
- 11—Chalk Bluff, Ark. Surrender of Jeff Thompson's command with 7,454 prisoners.
- 13—Palmetto Ranch, Tex., 118 Federals killed.
- 26—Surrender of Kirby Smith to Maj.-Gen. Canby's command with 20,000 prisoners.
- 26—The Armies of the East and West were disbanded and returned home, after a review at Washington. Close of the great Rebellion.

JUNE.

- 6—An order was issued for the release of all prisoners of war in the depots of the North.

JULY.

- 7—Mrs. Surratt, Harold, Payne, and Azertoth hanged at Washington for conspiracy in the murder of Lincoln.

DECEMBER.

- 18—Secretary Seward officially declared slavery abolished.

MARCH, 1867.

- 1 Nebraska admitted into the Union.

JUNE.

- 20—Alaska purchased from Russia for \$7,200,000.

FEBRUARY, 1868.

- 24—The House of Representatives impeached President Johnson.

APRIL.

- 26—The President was declared acquitted.

MAY, 1871.

- 8—The "Alabama Treaty" was concluded.

OCTOBER.

- 8, 9, 10—The great fire of Chicago occurred.

MAY, 1876.

- 10 to Nov. 10—The "World's Fair" in Philadelphia, the Centennial Anniversary of American Independence.

AUGUST.

- 1—Colorado admitted into the Union.

1878.

- Brooklyn bridge completed.

- Date. JANUARY, 1879.
 1 Specie payment resumed.
 JULY, 1881.
 2—President James A. Garfield shot by Chs. J. Guiteau at Washington, D. C.
 SEPTEMBER, 1881.
 19—The President died at Long Branch.
 1884.
 Washington monument completed.
 OCTOBER.
 28 Statue of Liberty unveiled.
 FEBRUARY, 1887.
 4 Interstate Commerce Law passed.
 APRIL, 1889.
 22—Oklahoma opened to settlement and on May 2, 1890, the President signed a bill organizing the territory.
 MAY.
 31 Flood at Johnstown, Pa.
 NOVEMBER.
 2—The Dakotas admitted into the Union.
 8—Montana admitted into the Union.
 11—Washington admitted into the Union.
 15—Brazil a Republic.
 FEBRUARY, 1890.
 18—Extradition treaty with Great Britain.
 MAY.
 21—The McKinley Bill passed.
 JUNE.
 26 Anti-Trust Law signed.
 JULY, 1890.
 3—Idaho admitted into the Union.
 10—Wyoming admitted into the Union.
 DECEMBER.
 3—International Copyright Law passed.
 MAY, 1892.
 5 Geary Chinese Exclusion bill became law.
 JANUARY, 1893.
 14 Revolution in Hawaii.
 MARCH.
 9 Cleveland recalled Hawaiian Annexation Treaty.
 OCTOBER.
 30 Silver Purchase law repealed.
 Worlds' Fair closed.

1893—THE WORLD'S COLUMBIAN EXPOSITION.

World's Columbian exposition held at Chicago, Ill., to commemorate the discovery of the Western Hemisphere by Christopher Columbus. It was dedicated first the 21st of October, 1892, by Vice-President Morton, acting for President Harrison, and was opened the first of May, 1893.

Principal Buildings—

1 Administration Building, whose dome was circled on its interior by a gallery 100 feet above the floor.

2 Transportation Building, 256x960 feet, and having a floor area of more than nine acres.

3 The Mines and Mining Building. It was 714x350 feet.

4 Machinery Hall. It contained seventeen acres of floor area. The huge Allis engine was 2,000 horse power.

5 The Agricultural Building was a structure 500x800 feet, with a floor area of nearly nineteen acres.

6 The Electricity Building. The main entrance on the South was conceived as a solid pylon pierced by a triumphal arch 92 feet high and 58 feet wide.

7 The Art Building. It was a beautiful specimen of Ionic architecture, measuring 500x320 feet.

8 The Woman's Building. The dimensions were 398x199 feet.

9 The United States Government Building. It was of the Modern Renaissance style, and covered an area of 420x350 feet.

10 The Horticultural Building was 998x250 feet, with a glazed dome in the centre 114 feet high and 180 feet in diameter.

11 The Building of Manufactures and Liberal Arts was not only the largest building in the world, but the largest that has ever existed under a roof, being four times as large as the Colosseum at Rome, which could seat 80,000 people, and three times as large as St. Peter's.

Attendance at the Fair, 27,539,041.

Receipts from all sources, \$28,423,940.41.

Expenses for construction and operation, \$26,746,420.49.

Balance unexpended, \$1,677,519.92.

The "White City" burned July 5, 1894.

1896.

The Roentgen's Rays were brought to public notice in January. It is claimed that the X rays will be found to have a power of penetrating all substances, although the degree of penetration will vary, resistance seeming to depend upon density rather than opacity.

DECEMBER, 1896.

Utah admitted into the Union.

7—Antonio Maceo and Francisco Gomez, the son of Maximo Gomez, were reported murdered near Punta Prava, in Havana Province. Maceo was a leader of the insurgents with Gomez.

10—A cable is opened for transmission of messages to Haiti and other places in the West Indies. The terminus of the western end of the cable is at New York city.

PART THIRD

GOLDEN NUMBER, EPACT, SOLAR CYCLE AND DOMINICAL LETTERS, ROMAN INDICTION, LETTERS OF MARTYROLOGY, BISSEXTILE OR LEAP-YEAR, JULIAN PERIOD AND EASTER.

1. The Golden Number or Lunar Cycle, invented by Methon, a mathematician and astronomer of Athens, who lived about 432 B. C., is a period or revolution of nineteen lunar years and seventeen embolismical months, after which the new and full moons fall about exactly on the same day of the month.

This cycle is called Golden Number, either on account of its ingenious invention or because it was written by the Athenians in golden numbers in public places. (C. Weiss, *Encyc. Dict. of Theology.*)

RULE: Add one to the date, as in the year 1 A. D., the golden number was 2, and divide the sum by 19, for any given year, from the beginning of the Christian era. The quotient indicates the number of cycles elapsed, and the remainder is the golden number for that year. Should there be no remainder, the proposed year is the 19th of the cycle. Ex.: 1880 plus 1 equals 1881 divided by 19 equals 99 and leaves no remainder; 1894 plus 1 equals 1895 divided by 19, leaves 14 for remainder, which is the golden number for 1894.

2. Epact. This is nothing but the number of days which the solar year (365) has over the lunar (354). So, the epact of the first year is 11 days; the second, 22; the third, 33, and so on, which, divided by 30, constitutes an embolismical or intercalated lunation (period between two moons), and leaves 3 for remainder. It keeps on so, adding to it, the difference between the solar and the lunar year, and rejecting 30 days when possible.

RULE: multiply the golden number by 11 and divide by 30. The remainder, when the product is over 30, is the epact for the year required, if it is previous to the Gregorian Correction, 10 days must be subtracted, from the 5th of October, 1582, to 1699; 11 days from 1700 to 1899; 12, from 1900 to 2199; 13, from 2200 to 2299; 14, from 2300 to 2399; 13, from 2400 to 2499; 14, from 2500 to 2599; 15, from 2600 to 2899; 16, from 2900 to 3099, etc. Equation Table of P. Merati, T. 2, Praenot., Reg. 4.

But if the subtrahend is greater than the Epact, you first add 30 to it, then make the subtraction, and the difference is the epact inquired for.

N. B.—When the epact is 25, the number written in Roman characters must be taken, if the golden number is less than 12; if it is equal or greater, the epact then is the one written in Arabic characters.

3. The Solar Cycle or Cycle of Dominical Letters is a revolution of 28 years, because, after 28 years, the Dominical Letters resume their same order. This Cycle is called Solar, not because it is supposed to have reference to the Sun, but to Sunday, which means or is called the day of the Sun (*Solis dies*).

The rule for finding the solar cycle for any given year, is simply to add 9 to the year required (for in the year 4000, the epact was 9 and in the year 1 A. D. the solar cycle was 10), and divide by 28. Ex.: 1894 plus 9 equals 1903, divided by 28, leaves 27, solar cycle for 1894. When there is no remainder, the solar cycle is 28.

Dominical Letters.—The seven letters of the alphabet, A, B, C, D, E, F, G, are placed in the calendar in order to denote the Sundays of the whole year round. They are placed in such a way, that the letter A, indicates the calends or the first of January; B, the second; C, the third; D, the fourth; E, the fifth; F, the sixth; G, the Seventh; A, the eighth, and so on, for every day of the year. These letters change every year in retrograding. But, in order to have no interruption in a Bissextile or leap-year, the letter which corresponds to the 24th of February, is repeated the 25th; in this way, all the letters for the other years are found in their proper place; but the Sunday following the intercalated day is indicated by another letter. For instance, the Dominical Letter for 1894 is G; F will be the one for 1895, and E, D, for 1896. That is, E, for January and February to the 25th, and D for the remainder of the year.

The reason is, that the year being composed of 365 days, there are 52 weeks and one day; and if the first day of the year is a Sunday, A, the last day will also be a Sunday, A. Consequently, the first day of the year following will be Monday, and as in the calendar, the first of January begins always with the letter A, the first Sunday of the year will be 7th, indicated by the letter G: Monday, 1st; Tuesday, 2d; Wednesday, 3d; Thursday, 4th; Friday, 5th; Saturday, 6th, and Sunday, 7th.

The year following will begin on Tuesday, first of January and the first Sunday will be the 6th, indicated by F, and so on. But in a leap-year, there are 52 weeks and two days. Consequently, the following year will retrocede two days as to the Dominical Letter. If, then, the year begins with the letter A, the following will begin with the letter F.

The rule for finding the dominical letter for any given year,

is to divide such year by 4, add the number of the year itself to the quotient, and to that sum add 5, if it is before the Gregorian correction of the calendar; but subtract 5, if it is after the said correction, from 1582 to 1699; 6, from 1700 to 1799; 7, from 1800 to 1899; 8, from 1900 to 2099; 9, from 2100 to 2199; 10, from 2200 to 2299; 11, from 2300 to 2499, and so on, and divide by 7. The remainder of the division, without paying any attention to the quotient, indicates the dominical letter in the following table:

G, F, E, D, C, B, A.

1, 2, 3, 4, 5, 6, 7, or 0.

Ex. 1893 ÷ 4, quot.	473	+	1893	=	2366	-	7	=	2359	÷	7	=	0	=	A
1894 ÷ 4, "	473	+	1894	=	2367	-	7	=	2360	÷	7	=	1	=	G
1895 ÷ 4, "	473	+	1895	=	2368	-	7	=	2361	÷	7	=	2	=	F
1896 ÷ 4, "	474	+	1896	=	2370	-	7	=	2363	÷	7	=	4	=	D
1900 ÷ 4, "	475	+	1900	=	2375	-	8	=	2367	÷	7	=	1	=	G

In a leap-year, as in 1896, the dominical letter D, found according to the above table, indicates Sunday, from the 26th of February to the end of the year; for January and February to the 25th, it will be the preceding letter E.

4. The Roman Indiction is a revolution of fifteen years. It is now used specially for the Pontifical Bulls and it begins the 1st of January. Though its origin is not exactly known, it seems, however, to have been initiated by Constantine after his final victory over Maxentius, October 28, 312. After entering the capital, he disbanded the Praetorians, adopted judicious measures for allaying the public excitement, and proclaimed that a period of fifteen years hereafter should be the term during which the annual tax on real property should be paid on the basis of a valuation made and proclaimed at the beginning of each quinquennial period.

The rule to find it is to add 3 to the year required and divide by 15.

5. Letters of Martyrology. These letters correspond in number to the lunar days which are 30, as are the epacts. a, indicates epact I; b, epact II; c, epact III, and so on. The 30th, marked by a star, *, corresponds to the capital letter P. The epact being found, the letter opposite the number is that of the Martyrology for the year required.

6. Bissextile or Leap-year. The year is composed of 365 days and almost 6 hours. The six hours, in four years, make a day, which is the one intercalated in February, and called then bissextile. But the six hours, although not being complete, lacking eleven minutes and a few seconds, has been, however, for a long time considered as complete; and after many hundred years, the ecclesiastical world was ten days in advance of the real time; so that the vernal equinox, instead of falling on the 21st of March, as it had been settled by the council of Nice, 325, fell on the 11th. This had to be remedied. In consequence, Pope Gregory XIII, according to

the calculations made, at his own request, by the famous astronomer, Aloysio Lilio, ordered that ten days should be suppressed from the month of October, so that the 5th (Friday) became the 15th, 1582. October, then had but twenty-one days, and made the year 1582 to consist only of 355 days.

As this deficiency of eleven minutes in 131 years, makes a difference of one day and one minute, and in the course of 400 years, three days, one hour and twenty minutes, to prevent such error and confusion in future, Gregory XIII furthermore ordered that from 1600, only one, out of every four centurial years, should be a leap-year: that is, 2000, 2400, etc., in order to bring the correction as exact as possible.

The rule to know unmistakably the leap-year, is to divide the units and tens of hundreds by four, for the ordinary leap-year, and the hundreds and units of thousands for the centurial leap-year: as 1600, 2000, 2400. The year is bissextile only when there is no remainder.

The above correction was adopted immediately by Italy, France and the other Catholic countries, but later by England (1752), Sweden (1753), Germany (1777), and finally by all Christian countries except Russia. She seems to prefer discord with the heavens to harmony with Rome.

7. Julian Period. This period, invented by Joseph Scaliger, is called Julian, because it is accommodated to the Roman year of 365 1-4 days, so-called of Julius Caesar and transmitted to us. The three cycles: Solar 28, Lunar 19 and of Indiction 15, multiplied by each other, $28 \times 19 \times 15$, equal 7980, are called the Julian Period. Its first year, which includes the present era, is the year 4713 B. C. So 1894 is the 6607th, and by dividing successively the Julian Period by 28, 19 and 15, we can always and surely have the solar cycle, the lunar or the golden number and the Roman Indiction. But since the Gregorian correction of the calendar, it is of no use.

Easter (German, Ostern; French, Paques; Syriac, Pasha, the Passover), the festival celebrated in commemoration of the resurrection of Jesus Christ, derives, probably, its Teutonic name from the festival of the goddess Ostara, in Anglo-Saxon, Eastre, which the Saxons of old were wont to celebrate about the same season at which the Christian festival of Easter occurs. This feast is as ancient as Christianity, having been established by the apostles, the eye-witnesses of the resurrection of our Saviour. From the first centuries, it was considered the greatest festival of the Christian religion. It included then the week previous to Easter, now called the Holy week, and the whole octave of the festival, during which solemn baptism was administered to Catechumens. The courts of justice were closed; alms dispensed to the poor and needy, and slaves also received their freedom at that season. The

preparation for the festival was made by a fast of forty days, as is still done in the Catholic church, and is called Lent.

The proper time for the celebration of Easter has occasioned no little controversy. As early as the second century, a dispute arose between the eastern and western churches. The Christians of Asia-Minor celebrated Easter on the 14th day of the first Jewish month, considering it to be equivalent to the Jewish Passover, and claimed to have received that custom from St. John the Evangelist and St. Philip. On the contrary, the western churches and all the others in union with the Roman, celebrated it on the Sunday following the 14th day, holding that it was the commemoration of the resurrection of Jesus Christ, and that they had for it the authority of St. Peter and St. Paul. That diversity of opinions lasted till the Council of Nice (325), which decided in favor of the western usage, and ordained that the celebration of Easter should thenceforth take place on the Sunday which immediately follows the full moon that falls upon or next after the day of the vernal equinox, which occurs on the 21st of March. Should the 14th day of the moon fall on Sunday, the celebration of Easter is deferred to the Sunday following, to avoid the concurrence with the Jews. Should, also, the moon be less than fourteen days old on the 21st of March, the 14th of the next moon is chosen, and the Sunday following is Easter. Thence it follows that Easter can be celebrated on any one of the thirty-five days between the 22d of March and the 25th of April.

Any one wishing to know the day on which Easter is to be celebrated, must first ascertain the age of the moon on the 21st of March. If the moon is fourteen days old on the 21st of March, Easter is celebrated the Sunday following, providing that that Sunday fall not on the 14th day of the moon.

By using the following table to locate Easter, one must first know the epact and the dominical letter of the year required; then, find in the table, the epact in one of the squares, and the dominical letter in the nearest one following (but never in the same square). The day of the month indicates the day on which Easter is to be celebrated that year.

However, that is not the actual moon in the heavens, nor even the mean moon of the astronomers, that regulates the time of Easter, but an altogether imaginary moon whose periods are so contrived, that the new calendar moon always follows the real new moon, sometimes by two or three days.

Table indicates in perpetuity, the days on which
Easter is to be celebrated.

XXIII C March 21	XXII D March 22	XXI E March 23	XX F March 24	XIX G March 25	XVIII
XVII B March 27	XVI C March 28	XV D March 29	XIV E March 30	XIII F March 31	
XI A April 2	X B April 3	IX C April 4	VIII D April 5	VII E April 6	
V G April 8	IV A April 9	III B April 10	II C April 11	I D April 12	
XXIX F April 14	XXVIII G April 15	XXVII A April 16	XXIV (1) B April 17	XXV & XXIV C April 18	
E April 20	F April 21	G April 22	A April 23	B April 24	

(1) When the Golden Number is above II and the *Epaet* 22, ten in Arabic characters is to be chosen.

Tables of Dominical Letters correspondi: Solar Cycles.

From the reformation of the Calendar by Julius Cæsar to the
Gregorian correction, October 5, 1582.

23 (G	24 F	25 E	26 D	27 C	28 B	29 A	30 G	1 F	2 E	3 D	4 C	5 B	6 A	7 G	8 F	9 E	10 D	11 C	12 B	13 A	14 G	15 F	16 E	17 D	18 C	19 B	20 A	21 G
<p>In a leap-year, the second letter is to be chosen.</p> <p>(1) Having suppressed ten letters from G the correction begins with the letter C.</p>																												
18 F	19 E	20 D	21 C	22 B	23 A	24 G																						

From October 5th, 1582, to 1699.																											
23	24	25	26	27	28	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
C	B	A	F	E	D	C	A	G	F	E	D	C	B	A	G	F	E	D	C	B	A	G	F	E	D	C	B
From 1700 to 1799.																											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
D	B	A	G	F	E	D	C	B	A	G	F	E	D	C	B	A	G	F	E	D	C	B	A	G	F	E	D
From 1800 to 1899.																											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
E	C	B	A	G	F	E	D	C	B	A	G	F	E	D	C	B	A	G	F	E	D	C	B	A	G	F	E
From 1900 to 2099.																											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
F	D	C	B	A	G	F	E	D	C	B	A	G	F	E	D	C	B	A	G	F	E	D	C	B	A	G	F
From 2100 to 2199.																											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
G	E	D	C	B	A	G	F	E	D	C	B	A	G	F	E	D	C	B	A	G	F	E	D	C	B	A	G
From 2200 to 2299.																											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
A	F	E	D	C	B	A	G	F	E	D	C	B	A	G	F	E	D	C	B	A	G	F	E	D	C	B	A
From 2300 to 2499.																											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
B	G	F	E	D	C	B	A	G	F	E	D	C	B	A	G	F	E	D	C	B	A	G	F	E	D	C	B

To find the dominical letter in these tables, add the year required to the Julian Period 4713 B. C. and divide by 28; or add 9 to the given year and divide by 28.

Tables of Golden Numbers corresponding to Epacts.

From the Julian Reformation of the calendar, 8956, ^{A.M.} B.C., to the Gregorian Correction, A. D., 1582.

Epacts.	XI	XXII	III	XIV	XXV	VI	XVII	XXVIII	IX	XX	I
Golden N.	1	2	3	4	5	6	7	8	9	10	11

Epacts.	XII	XXIII	IV	XV	XXVI	VII	XXVIII	XXIX
Golden N.	12	13	14	15	16	17	18	19

From October 5th, 1582 to 1699 *(10 days subtracted).

Epacts.	XXVI	VII	XVIII	XXIX	X	XXI	II	XIII	XXIV	V
Golden N.	6	7	8	9	10	11	12	13	14	15

Epacts.	XVI	XXVII	VIII	XIX	I	XII	XXIII	IV	XV
Golden N.	16	17	18	19	1	2	3	4	

From 1700 to 1899.

Epacts.	*	XI	XXII	III	XIV	XXV	VI	XVII	XXVIII	IX
Golden N.	1	2	3	4	5	6	7	8	9	10

Epacts.	XX	I	XII	XXIII	IV	XV	XXVI	VII	XXVIII
Golden N.	11	12	13	14	15	16	17	18	19

From 1900 to 2199.

Epacts.	XXIX	X	XXI	II	XIII	XXIV	V	XVI	XXVII	VIII
Golden N.	1	2	3	4	5	6	7	8	9	10

Epacts.	XIX	*	XI	XXII	III	XIV	XXV	VI	XXVII
Golden N.	11	12	13	14	15	16	17	18	19

From 2200 to 2299.

Epacts.	XXVIII	IX	XX	I	XII	XXIII	IV	XV	XXVI	VII
Golden N.	1	2	3	4	5	6	7	8	9	10

Epacts.	XVIII	XXIX	X	XXI	II	XIII	XXIV	V	XVI
Golden N.	11	12	13	14	15	16	17	18	19

From 2300 to 2399.

Epacts.	XXVII	VIII	XIX	*	XI	XXII	III	XIV	XXV	VI
Golden N.	1	2	3	4	5	6	7	8	9	10

Epacts.	XVII	XXVIII	IX	XX	I	XII	XXIII	IV	XV
Golden N.	11	12	13	14	15	16	17	18	19

From 2400 to 2499 same as from 2200 to 2299.

TABLE indicating, in perpetuity, the Dominical Letters, the Letters of Martyrology, the Epacts, Easter and all the Movable Feasts during the year.

Letters of Martyrology.	Epacts.	Dom. Letters.	Septuagesima S.	Ash Wednesday.	Easter Sunday.	Ascension.	Pentecost.	Corpus-Christi.	S-days after Pent.	1st S-day in Advent.
D C	XXXIII XXXII	.... D	Jan. 18	Feb. 4	Mch. 22	Apr. 30 May 1	May 10	May 21	23	20 Nov.
B A u t s r q r n	XXI XX XIX XVIII XVII XVI XV XIV XIII	E F G A B C D E F	19 20 21 22 23 24 25 26 27	5 6 7 8 9 10 11 12 13	23 24 25 26 27 28 29 30 31	12 13 14 15 16 17 18 19	11 12 13 14 15 16 17 18 19	22 23 24 25 26 27 28 29 30	23 24 25 26 27 28 29 30 31	30 1 Dec. 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
m l k i	XII XI X IX	G A B C	28 29 30 31	14 15 16 17	1 2 3 4	10 11 12 13	20 21 22 23	31 1 2 3	27 28 29 30	2 3 4 5
h g f e d c b a	VIII VII VI V IV III II I	D E F G A B C D	1 2 3 4 5 6 7 8	18 19 20 21 22 23 24 25	5 6 7 8 9 10 11 12	14 15 16 17 18 19 20 21	24 25 26 27 28 29 30 31	4 5 6 7 8 9 10 11	26 27 28 29 30 31 1 2	20 21 22 23 24 25 26 27 28 29 30 31
P N M	XXIX XXVIII	E F G	9 10 11	26 27 28	13 14 15	22 23 24	June 1 2 3	12 13 14	23 24 25	30 1 Dec. 2
H FXXV FXXIV	XXVII XXVI XXV	A B C D E F G	12 13 14 15 16 17 18	1 2 3 4 5 6 7	16 17 18 19 20 21 22	25 26 27 28 29 30 31	4 5 6 7 8 9 10	15 16 17 18 19 20 21	25 26 27 28 29 30 31	3 4 5 6 7 8 9 10
		A B C	19 20 21	8 9 10	23 24 25	June 1 2 3	11 12 13	22 23 24	23 24 25	3 4 5

The Dominical Letter is never taken on the same line as the Epact, but on the one following.

The Revised Paschal Table.

Dom. Letters.	Cycle of Epacta.	Septuagesima Sunday.	Ash Wednesday.	Easter Sunday.	Ascension.	Pentecost.	Corpus Christi.	Sundays after Pentecost.	First Sund. in Advent.
D	23 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 1 * 23 23 27 26 25XXV 24	18 Jan. 23 Jan. 1 Feb. 8 Feb. 15 Feb.	4 Feb. 11 Feb. 18 Feb. 25 Feb. 4 Mar.	22 Mar. 29 Mar. 5 Apr. 12 Apr. 19 Apr.	30 Apr. 7 May 14 May 21 May 28 May	10 May 17 May 24 May 31 May 7 June	21 May 28 May 4 June 11 June 18 June	28 27 26 25 24	23 Nov. 23 Nov. 23 Nov. 23 Nov. 23 Nov.
E	23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 * 29 23 27 26 25XXV 24	19 Jan. 26 Jan. 2 Feb. 9 Feb. 16 Feb.	5 Feb. 12 Feb. 19 Feb. 26 Feb. 5 Mar.	23 Mar. 30 Mar. 6 Apr. 13 Apr. 20 Apr.	1 May 8 May 15 May 22 May 29 May	11 May 18 May 25 May 1 June 8 June	22 May 29 May 5 June 12 June 19 June	23 27 26 25 24	30 Nov. 30 Nov. 30 Nov. 30 Nov. 30 Nov.
F	23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 * 29 23 27 26 25XXV 24	20 Jan. 27 Jan. 3 Feb. 10 Feb. 17 Feb.	6 Feb. 13 Feb. 20 Feb. 27 Feb. 6 Mar.	24 Mar. 31 Mar. 7 Apr. 14 Apr. 21 Apr.	2 May 9 May 16 May 23 May 30 May	12 May 19 May 26 May 2 June 9 June	23 May 30 May 6 June 13 June 20 June	23 27 26 25 24	1 Dec. 1 Dec. 1 Dec. 1 Dec. 1 Dec.
G	23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 * 29 23 27 26 25XXV 24	21 Jan. 28 Jan. 5 Feb. 12 Feb. 19 Feb.	7 Feb. 14 Feb. 21 Feb. 28 Feb. 7 Mar.	25 Mar. 1 Apr. 8 Apr. 15 Apr. 22 Apr.	3 May 10 May 17 May 24 May 31 May	13 May 20 May 27 May 3 June 10 June	24 May 31 May 7 June 14 June 21 June	23 27 26 25 24	2 Dec. 2 Dec. 2 Dec. 2 Dec. 2 Dec.

The Revised Paschal Calendar (Continued).

Dom. Letters.	Cycle of Epacts.	Septuagesima Sunday.	Ash Wednesday.	Easter Sunday.	Ascension.	Pentecost.	Corpus Christi.	Sundays after Pentecost.	First Sunday in Advent.
A	23 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 • 29 28 27 26 25 XXV 24	23 Jan. 20 Jan. 16 Feb. 13 Feb. 10 Feb.	8 Feb. 15 Feb. 22 Feb. 1 Mar. 8 Mar.	28 Mar. 2 Apr. 9 Apr. 16 Apr. 23 Apr.	4 May 11 May 18 May 25 May 1 June	14 May 21 May 28 May 4 June 11 June	25 May 1 June 8 June 15 June 22 June	28 27 26 25 24	3 Dec. 3 Dec. 3 Dec. 3 Dec. 3 Dec.
	23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 • 29 28 27 26 25 XXIV 24	23 Jan. 30 Jan. 6 Feb. 13 Feb. 20 Feb.	9 Feb. 16 Feb. 23 Feb. 2 Mar. 9 Mar.	27 Mar. 3 Apr. 10 Apr. 17 Apr. 24 Apr.	5 May 12 May 19 May 26 May 2 June	15 May 22 May 29 May 5 June 12 June	29 May 5 June 12 June 19 June 26 June	27 26 25 24 23	27 Nov. 27 Nov. 27 Nov. 27 Nov. 27 Nov.
	23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 • 29 28 27 26 25 XXV 24	24 Jan. 31 Jan. 7 Feb. 14 Feb. 21 Feb.	10 Feb. 17 Feb. 24 Feb. 3 Mar. 10 Mar.	28 Mar. 4 Apr. 11 Apr. 18 Apr. 25 Apr.	6 May 13 May 20 May 27 May 3 June	16 May 23 May 30 May 6 June 13 June	27 May 3 June 10 June 17 June 24 June	27 26 25 24 23	28 Nov. 28 Nov. 28 Nov. 28 Nov. 28 Nov.

How to understand and use the Revised Paschal Table:

In this table, when one wishes to find the day on which Easter is to be celebrated, he must know, 1st, the dominical letter; 2d, the epact; and on the same line will follow Septuagesima Sunday, Easter and all the movable feasts for the whole year. As Easter regulates the respective position of almost all the movable feasts, we need only know the relations existing between that (feast) and the other movable feasts.

The Rogation-days fall on Monday, Tuesday and Wednesday following the fifth Sunday after Easter and prior to Ascension, on Thursday, forty days after Easter.

Pentecost comes fifty days after Easter, ten days after Ascension, or the seventh Sunday after Easter.

Corpus-Christi falls on Thursday after Trinity-Sunday or sixty-one days after Easter.

Ash-Wednesday is forty-six days before Easter.

Quinquagesima-Sunday is three days before Ash-Wednesday, or the seventh Sunday before Easter.

Sexagesima, fifty-six days, or the eighth Sunday before Easter.

Septuagesima, sixty-three days, or the ninth Sunday before Easter.

The number of Sundays between Epiphany and Septuagesima, and between Pentecost and Advent, is also regulated by Easter; but in such a manner that the office, lacking for the Sundays after Pentecost, is supplied by that left after Epiphany.

The Ember-days are Wednesday, Friday and Saturday of the first week in Lent, of the Pentecost week, of the week following the 14th of September and of the third week in Advent.

The four Sundays in Advent are regulated by Christmas. For example, when Christmas falls on Sunday, the first Sunday in Advent falls on the 27th day of November; when on Monday, it falls on the 3d of December, etc.

How to make use of the Calendar:

The first column, on the left side, indicates the lunar cycle which is composed of a series or succession of retrograde numbers written in roman characters from * and XXIX to I, and in such way that the yearly epact indicates all the new moons, from the day of the month in the fourth column opposite the epact. In this way we can, easily and at all times, know the day of the moon, as well as the day on which Easter is to be celebrated. The Paschal Moon is always the new moon which falls between the 8th of March and the 5th of April inclusively. Knowing then the epact, we have the first day of the moon; fourteen days after will be the full moon and the following Sunday is Easter. Ex.: in 1896, the epact is XV, which is opposite the 16th of March; fourteen days after will be the full moon, and the nearest Sunday following

falls on the 5th of April, opposite which, in the calendar, is the dominical letter D, for the current year. In fact, Easter falls on the 5th of April in 1896.

In the second column, we find a series of letters which indicates every Sunday in the year. It shows also the day of the month on which is, was or will be a Sunday or any other day of the week of which we know the date.

In the third column is the Roman division of the days of the month in Calends, Nones and Ides. The first day of each month was called Calends (Calendae, from calo-are, to call) after which came Nones (Nonae, from nonus) the ninth day before the Ides, Idus (from iduo-are to separate, divide). Each month then had three distinct periods: from Calends to Nones, from Nones to Ides and Ides to Calends of the next month, which were reckoned backwards by the Romans. The Ides fell on the fifteenth day for March, May, July and October, and on the thirteenth for the other months; and Nones, the seventh for March, May, July and October, and the fifth for the other months. They had then six days of Nones in March, May, July and October, and four in the other months, but eight days of Ides for every month. The number of days of Calends depended upon the number of days in the month and the day of the month on which the ides fell. They vary from nineteen to sixteen: January, August and December have nineteen days; April, June, September and November, eighteen; March, May, July and October 17, and February 16, except in a leap-year. The sixth of the Calends is then repeated: *Bissexto calendas martii*. Hence the name of our *Bissextile* year.

The fourth column indicates the days of the month and helps to calculate the days on which the movable feasts are to be celebrated before and after Easter. They must be combined, however, with the dominical letters of the year. Easter being known, we count six dominical letters before the one which indicates Easter, and Ash-Wednesday precedes the sixth. As to the number of Sundays after Pentecost, we reckon the dominical letters from Christmas in going backwards as far as Pentecost, less four, indicating the four Sundays in Advent. For the period between Epiphany and Septuagesima, we count in the same way.

JANUARY

Epacts.	D.L.	D.M.
*	A Calends	1 Circumcision. Slave trade abolished 1808.
XXIX	B IV d. before Non.	2 Dr. Ure died 1857.
XXVIII	C III.	3 Battle of Princeton, N. J., 1777.
XXVII	D Day before Nones.	4 Bombardment of Paris 1871.
XXVI	E Nones.	5
25 XXV	F VIII d. before Id.	6 Epiphany. Mme. D'Arblay died 1840.
XXIV	G VII before Ides.	7 The French in Mexico 1862.
XXIII	A VI.	8 Eli Whitney died 1825.
XXII	B V.	9 Connecticut adopted constitution 1788.
XXI	C IV.	10
XX	D III.	11 F. Scott Key died 1843.
XIX	E Day before Ides.	12 Terrible Dakota blizzard 1888.
XVIII	F Ides.	13 Salm. P. Chase born 1808.
XVII	G XIX day bef. Cal.	14 Cardinal Manning born July 15, 1808, died 1892.
XVI	A XVIII.	15 Dr. Parr born 1747.
XV	B XVII.	16 Gen. Hazen died 1837.
XIV	C XVI.	17 Geo. Bancroft born Oct. 3, 1800, died 1891.
XIII	D XV.	18 German empire proclaimed 1871.
XII	E XIV.	19 Gen. Zollikoffer killed 1862.
XI	F XIII.	20 King Kalakua died 1891.
X	G XII.	21 Geo. D. Prentice died 1870.
IX	A XI.	22 Byron born 1788.
VIII	B X.	23 Gustave Doré died 1883.
VII	C IX.	24 Rev. Charles Kingsley died 1875.
VI	D VIII.	25 Conversion of St. Paul 34.
V	E VII.	26 Dr. Jenner died 1823.
IV	F VI.	27 Emp. William II. born 1859.
III	G V.	28 Stanley born 1841.
II	A IV.	29
I	B III.	30 Osceola died 1838.
*	C Day before the Cal. of February.	31 Rev. C. H. Spurgeon d. 1892.

FEBRUARY

Epacts.	D.L.	D.M.
XXIX	D Calends.	1 Oklahoma a territory 1889.
XXVIII	E IV before N.	2 Purification—Candlemas.
XXVII	F III.	3 Jay Gould died 1892.
25, XXVI	G II.	4 Dr. Morell Mackenzie died 1892.
XXV, XXIV	A Nones.	5
XXIII	B VIII.	6
XXII	C VII.	7 Pius IX. died 1878.
XXI	D VI.	8 Jules Verne born 1828.
XX	E V.	9 Gen. Hancock died 1886.
XIX	F IV.	10 Theo. S. Fay born 1807.
XVIII	G III.	11 Thos. A. Edison born 1847.
XVII	A II.	12 John C. Dalton died 1889.
XVI	B Ides.	13 Adm. Porter died 1891.
XV	C XVI.	14 St. Valentine.
XIV	D XV.	15 Galileo born 1564.
XIII	E XIV.	16 Cardinal Wiseman born Aug. 2, 1802, died 1865.
XII	F XIII.	17
XI	G XII.	18 Extradition treaty with Great Britain 1890.
X	A XI.	19
IX	B X.	20 Commercial treaty with Japan 1889. Leo XIII elected Pope 1878.
VIII	C IX.	21
VII	D VIII.	22 Washington born 1732.
VI	E VII.	23
V	F VI.	24 St. Matthias. Fulton died 1815.
In a l. year, bis.	VI. Calendas martii.	
IV	G V.	25
III	A IV.	26
II	B III.	27
I	C II.	28 Lamartine died 1815.

MARCH

Epacts.	D. L.	D. M.	
*	D	1	Calendis Martii St. David.
XXIX	E	2	Sexto nonas Martii Pope Leo XIII born 1810. (und. ante)
XXVIII	F	3	Quinto non. martii Russian serfdom abolished, 1861.
XXVII	G	4	Quarto " " Noah Porter died, 1892.
XXVI	A	5	Tertio " " Boston massacre, 1770.
25 XXV	B	6	Pridie " " "
XXIV	C	7	Nonis martii
XXIII	D	8	Octavo idus martii H. W. Beecher died, 1887.
XXII	E	9	Septimo " " Bat. Hampton Roads, 1862.
XXI	F	10	Sexto " " Livingstone's 2d expedition, 1858.
XX	G	11	Quinto " " Henry Wheaton died, 1848.
XIX	A	12	Quarto " " Treaty Constantinople, 1854.
XVIII	B	13	Tertio " " Uranus discovered, 1781.
XVII	C	14	Pridie " " "
XVI	D	15	Idibus martii Samoan disaster, 1889; J. Cæsar assassinated 44 B.C.
XV	E	16	Decimo Septimo calendas (ante un- derstood) Aprilis Mexico evacuated by the French, 1867.
XIV	F	17	Decimo sexto calen- St. Patrick. das aprilis
XIII	G	18	Decimo quinto cal- The Suez Canal completed, endas aprilis 1869.
XII	A	19	Decimo quarto cal- Yale College founded, 1701. endas aprilis
XI	B	20	Decimo tertio calen- Spring begins. das aprilis
X	C	21	Duodecimo calen- Cranmer burnt, 1556. das aprilis
IX	D	22	Undecimo calendas
VIII	E	23	Decimo cal. aprilis
VII	F	24	Nono " " Longfellow died, 1882.
VI	G	25	Octavo calendas Annunciation. J. W. Drexel aprilis died, 1888.
V	A	26	Septimo calendas Beethoven died, 1814. aprilis
IV	B	27	Sexto calendas Battle of the Horseshoe, aprilis 1814.
III	C	28	Quinto calendas Planet Pallas discovered aprilis 1802.
II	D	29	Quarto cal. aprilis
I	E	30	Tertio " " Treaty of Paris, 1856.*
*	F	31	Pridie calendas Boston Port Bill annulled, aprilis 1774.

APRIL

Epacts.	D. L.	D. M.
XXIX	G Calends	1 Bismarck born, 1815.
XXVIII	A IVd. b. n.	2 Copenhagen bombarded, 1801.
XXVII	B III	3 Wash. Irving born, 1788.
25 XXVI	C II	4
XXV XXIV	D Nones	5
XXIII	E VIII b. I	6 G. A. R. organized, 1866.
XXII	F VII b. Id.	7 Ohio extensively settled, 1788.
XXI	G VI b. Id.	8 Louisiana admitted, 1812.
XX	A Vb. Ides	9 Lord Bacon died, 1626.
XIX	B IV	10
XVIII	C III	11 Charles Reade died, 1884.
XVII	D II	12 Fort Sumter bombarded, 1861.
XVI	E Ides	13 Fall of Magdala, 1868.
XV	F XVIII calends of May	14 President Lincoln assassinated, 1865.
XIV	G XVII	15 And. Johnson inaugurated, 1865.
XIII	A XVI	16 War between France and Mexico, 1862.
XII	B XV	17 Benj. Franklin died, 1790.
XI	C XIV	18 Roscoe Conkling died, 1888.
X	D XIII	19 Byron died, 1824.
IX	E XII	20 Darwin died, 1882.
VIII	F XI	21 Bat. San Jacinto, 1836.
VII	G X	22 Cortez landed in Mex., 1519.
VI	A IX	23 St. George. Shakespeare died, 1616.
V	B VIII	24 Count Von Moltke died, 1891.
IV	C VII	25 St. Mark. Bat. Camden, 1781.
III	D VI	26 Montreal Riots. 1849.
II	E V	27
I	F IV	28
*	G III	29
XXIX	A II day before cal. of May.	30 Washington inaugurated, 1789.

MAY

Epacts. D. L.

XXVIII B Calends.

XXVII C VI

XXVI D V

25, XXV E IV

XXIV F III

XXIII G II

XXII A Nones

XXI B VIII

XX C VII

XIX D VI

XVIII E V

XVII F IV

XVI G III

XV A II

XIV B Ides

XIII C XVII

XII D XVI

XI E XV

X F XIV

IX G XIII

VIII A XII

VII B XI

VI C X

V D IX

IV E VIII

III F VII

II G VI

I A V

* B IV

XXIX C III

XXVIII D II

D. M.

1 St. Philip and St. James.

2 Leonardo da Vinci died, 1520.

3

4 Irish rebellion, 1798.

5 Empress Eugenie born, 1826.

6 Battle of Oswego, 1814.

7

8 John Stuart Mill died, 1873.

9 Bat. Reseca de la Palma,
1846.10 Pacific Railroad finished,
1869.

11

12 Crown Point captured, 1775.

13 Slavery abolished in Brazil,
1888.

14 Vaccination discovered, 1796.

15

16

17 King Alfonso of Spain born,
1856.

18

19 Crusades ended, 1291.

20 Lafayette died, 1834.

21 McKinley bill passed, 1890.

22 Manzoni died, 1873.

23

24 Queen Victoria born, 1819.

25 Paris burnt, 1871.

26

27 Calvin died, 1564.

28 Agassiz born, 1807.

29 Amnesty, proclamation, 1865.

30 Voltaire died, 1778.

31 Dr. Kane sailed, 1858.

JUNE

Epacts.	D. L.
XXVII	E Calends
25 XXVI	F IV
25 XXIV	G III
XXIII	A II
XXII	B Nones
XXI	C VIII
XX	D VII
XIX	E VI
XVIII	F V
XVII	G IV
XVI	A III
XV	B II
XIV	C Ides
XIII	D XVIII
XII	E XVII
XI	F XVI
X	G XV
IX	A XIV
VIII	B XIII
VII	C XII
VI	D XI
V	E X
IV	F IX
III	G VIII
II	A VII
I	B VI
*	C V
XXIX	D IV
XXVIII	E III
XXVII	F II

D. M.	
1	Tennessee admitted, 1796.
2	
3	
4	
5	Von Weber died, 1826
6	Bat. Stony Creek, 1813.
7	Convention at Albany, 1754.
8	Pres. And. Jackson died, 1845.
9	War between England and France, 1756.
10	
11	St. Barnabas.
12	First railroad in Japan, 1872.
13	Berlin Congress met, 1878.
14	Samoan treaty signed, 1889.
15	Emp. Frederick III of Germany died, 1888.
16	Pius IX elected Pope, 1846.
17	
18	Battle of Waterloo, 1815.
19	Emp. Maximilian shot, 1867.
20	
21	Summer begins.
22	Rider Haggard born, 1856.
23	
24	St. John Baptist.
25	
26	Sim. Cameron died, 1889.
27	Joseph Smith killed, 1844.
28	Bat. Sullivan's Island, 1776.
29	St. Peter and St. Paul.
30	Montezuma died, 1520.

JULY

Epacta.	D.L.	D.M.	
XXVI	G Calends.	1	T. D. Woolsey died 1889.
25, XXV	A VI.	2	
XXIV	B V.	3	
XXIII	C IV.	4	Independence Day 1776.
XXII	D III.	5	Bat. Wagram 1809.
XXI	E II.	6	Daguerre died 1851.
XX	F Nones	7	Huss burned at the stake 1415.
XIX	G VIII.	8	Jeanette expedition sailed 1879.
XVIII	A VII.	9	
XVII	B VI.	10	Columbus born 1436.
XVI	C V.	11	Hamilton shot 1804.
XV	D IV.	12	Admiral Dahlgren died 1870.
XIV	E III.	13	Capt. Cook's 2d voyage 1772.
XIII	F II.	14	French Revolution commenced 1789.
XII	G Ides.	15	Stony Point captured 1779.
XI	A XVII.	16	Flight of Mahomet 622.
X	B XVI.	17	
IX	C XV.	18	Papal infallibility decreed 1870.
VIII	D XIV.	19	Iturbide emp. of Mexico shot 1824.
VII	E XIII.	20	
VI	F XII.	21	First battle of Bull Run 1861.
V	G XI.	22	Wyoming a territory 1868.
IV	A X.	23	General Grant died 1885.
III	B IX.	24	Bat. Niagara 1759.
II	C VIII.	25	St. James.
I	D VII.	26	
*	E VI.	27	
XXIX	F V.	28	
XXVIII	G IV.	29	
XXVII	A III.	30	William Penn died 1718.
25, XXVI	B II.	31	

AUGUST

Epacts.	D.L.	D.M.	
25, XXIV	C Calends	1	Lammas-day.
XXIII	D IV.	2	Colorado admitted 1876.
XXII	E III.	3	Eugene Sue died 1857.
XXI	F II.	4	Mackinaw taken by British 1814.
XX	G Nones.	5	Atlantic cable landed 1858.
XIX	A VIII.	6	Bat. Hanging Rock 1780.
XVIII	B VII.	7	Ira Aldridge died 1867.
XVII	C VI.	8	
XVI	D V.	9	Ashburton treaty 1842.
XV	E IV.	10	Madagascar discovered 1506.
XIV	F III.	11	Cardinal Newman died 1890
XIII	G II.	12	
XII	A Ides.	13	Oregon a territory 1848.
XI	B XIX.	14	Invention of printing 1487.
X	C XVIII.	15	Walter Scott born 1771.
IX	D XVII.	16	Bat. Bennington 1777.
VIII	E XVI.	17	Jonathan Trumbull died 1809.
VII	F XV.	18	
VI	G XIV.	19	
V	A XIII.	20	Mexicans defeated at Contreras 1847.
IV	B XII.	21	
III	C XI.	22	Negro insurrection in Virginia 1831.
II	D X.	23	Treaty of Prague 1866.
I	E IX.	24	St. Bartholomew.
*	F VIII.	25	
XXIX	G VII.	26	Cannons first used 1846.
XXVIII	A VI.	27	Bat. Long Island 1776.
XXVII	B V.	28	Delaware Bay discovered 1609.
XXVI	C IV.	29	
25. XXV	D III.	30	
XXIV	E II.	31	"Pilgrim's Progress" pub. 1678.

SEPTEMBER

Epacts.	D. L.	D. M.
XXIII	F Calends	1 Jenny Lind in New York, 1850.
XXII	G IV	2
XXI	A III	3 Definitive treaty of peace, 1788.
XX	B II	4 France a republic, 1870.
XIX	C Nones	5 Continental congress, 1774.
XVIII	D VIII	6 Lafayette born, 1757.
XVII	E VII	7 Bat. Borodino, 1812.
XVI	F VI	8 Jerusalem sacked, 70.
XV	G V	9 Admission of California, 1850.
XIV	A IV	10 Bat. Lake Erie, 1813.
XIII	B III	11 Bat. on Lake Champlain, 1814.
XII	C II	12 Baltimore bombarded, 1814.
XI	D Ides	13 Bat. Quebec, 1759.
X	E XVIII	14 Wellington died, 1852.
IX	F XVII	15
VIII	G XVI	16 Germans evacuate France, 1873.
VII	A XV	17 Mat. Carey died, 1839.
VI	B XIV	18 Prof. Davies died, 1876.
V	C XIII	19 Ex-Pres. Balmaceda of Chili died, 1891.
IV	D XII	20 Italian troops occupy Rome, 1870.
III	E XI	21 St. Matthew.
II	F X	22
I	G IX	23 Wilkie Collins died, 1889.
*	A VIII	24 Steamer Niagara burned, 1856.
XXIX	B VII	25 Philadelphia taken by British, 1777.
XXVIII	C VI	26 Holy Alliance, 1815.
XXVII	D V	27 Gen. B. Bragg died, 1876.
25 XXVI	E IV	28
25 XXIV	F III	29 Michaelmas day.
XXIII	G II	30

OCTOBER

Epacts.	D. L.	D. M.
XXII	A Calends	1
XXI	B VI	2 Pan-American congress met, 1889.
XX	C V	3 Capt. Cook at New Zealand, 1768.
XIX	D IV	4 Ex-Pres. Hayes born, 1822.
XVIII	E III	5 N. Y. Crystal Palace burnt, 1858.
XVII	F II	6 Charles S. Parnell died, 1891.
XVI	G Nones	7 Battle of Lepanto, 1571.
XV	A VIII	8
XIV	B VII	9
XIII	C VI	10
XII	D V	11 Zwingli killed at Cappel, 1531.
XI	E IV	12 San Salvador discovered, 1492.
X	F III	13 Bat. Queenstown, Can., 1812.
IX	G II	14
VIII	A Ides	15
VII	B XVII	16 Marie Antoinette beheaded, 1793.
VI	C XVI	17 Capitulation at Saratoga, 1777.
V	D XV	18 St. Luke, Evangelist.
IV	E XIV	19
III	F XIII	20
II	G XII	21
I	A XI	22
*	B X	23 Napoleon evacuates Moscow, 1812.
XXIX	C IX	24 Florida ceded to U. S., 1820.
XXVIII	D VIII	25
XXVII	E VII	26
XXVI	F VI	27 Metz surrendered, 1870.
25 XXV	G V	28 St. Simon and St. Jude.
XXIV	A IV	29
XXIII	B III	30
XXII	C II	31 Halloween. Nevada a state, 1864.

NOVEMBER,

Epacts.	D. L.	D. M.
XXI	D Calends	1 All Saints' Day.
XX	E IV	2 All Souls' Day. The Dako- tas admitted, 1889.
XIX	F III	3 American army disbanded, 1783.
XVIII	G II	4 Mendelssohn died, 1847.
XVII	A Nones	5 Gen. B. F. Butler born, 1818.
XVI	B VIII	6 Gen. G. G. Meade died, 1872.
XV	C VI	7 Bat. Tippecanoe. 1811.
XIV	D VI	8 John McCullough died, 1885.
XIII	E V	9 Prince of Wales born, 1841.
XII	F IV	10
XI	G III	11 Washington a state, 1889.
X	A II	12
IX	B Ides	13 Rossini died, 1868.
VIII	C XVIII	14
VII	D XVII	15 Brazil a republic, 1889.
VI	E XVI	16
V	F XV	17 Independence Day in Switz- erland, 1807.
IV	G XIV	18 Cape Good Hope discovered, 1497.
III	A XIII	19
II	B XII	20
I	C XI	21 Chloroform first used, 1847.
*	D X	22 Thurlow Weed died, 1832.
XXIX	E IX	23
XXVIII	F VIII	24 Tasmania discovered, 1642.
XXVII	G VII	25
25 XXVI	A VI	26
25 XXIV	B V	27
XXIII	C IV	28 Wash. Irving died, 1859.
XXII	D III	29 Martin Farquhar Tupper died, 1889.
XXI	E II	30 St. Andrew.

DECEMBER

Epacts.	D. L.	D. M.
XX	F Calends	1 Princess of Wales born, 1844.
XIX	G IV	2 Cortez died, 1554.
XVIII	A III	3 International copyright law passed, 1890.
XVII	B II	4 Dom Pedro II of Brazil died, 1891.
XVI	C Nones	5 Mozart died, 1791.
XV	D VIII	6 St. Nicholas.
XIV	E VII	7 Washington's farewell to Congress, 1796.
XIII	F VI	8 Immaculate Conception decreed, 1854.
XII	G V	9 Milton born, 1608.
XI	A IV	10 Russians captured Plevna, 1877.
X	B III	11 Rome evacuated by the French, 1866.
IX	C II	12
VIII	D Ides	13 Rome burnt, 64,
VII	E XIX	14 Washington died, 1799.
VI	F XVIII	15 Sitting Bull killed, 1890.
V	G XVII	16 United States recognized by France, 1777.
IV	A XVI	17
III	B XV	18
II	C XIV	19
I	D XIII	20
*	E XII	21 Winter begins.
XXIX	F XI	22 St. Thomas.
XXVIII	G X	23
XXVII	A IX	24 Treaty of Ghent signed, 1814.
XXVI	B VIII	25 Christmas.
25 XXV	C VII	26 St. Stephen.
XXIV	D VI	27 St. John, Evangelist.
XXIII	E V	28 Holy Innocents.
XXII	F IV	29 William E. Gladstone born, 1809.
XXI	G III	30
XX	A II	31 Gen. Montgomery slain, 1775.

Perpetual Calendar

SUNDAY-SUNDAY

JANUARY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	*	*	*	*
*	*	*	*	*	*	*

FEBRUARY.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	*	*	*	*

MARCH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	*

APRIL.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

MAY.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	*	*	*

JUNE.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*
*	*	*	*	*	*	*

SUNDAY-SUNDAY

JULY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	*	*	*	*	*

AUGUST.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	*	*

SEPTEMBER.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

OCTOBER.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	*	*	*	*
*	*	*	*	*	*	*

NOVEMBER.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

DECEMBER.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	*	*	*	*	*	*

Perpetual Calendar

MONDAY-MONDAY

JANUARY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	*	*	*

FEBRUARY.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	*	*	*

MARCH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
*	*	*	*	*	*	*

APRIL.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

MAY.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	*	*

JUNE.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
*	*	*	*	*	*	*

MONDAY-MONDAY

JULY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	*	*	*	*

AUGUST.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	*

SEPTEMBER.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

OCTOBER.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	*	*	*

NOVEMBER.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*

DECEMBER.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	*	*	*	*	*

Perpetual Calendar

TUESDAY-TUESDAY

JANUARY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	*	*

FEBRUARY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	*	*

MARCH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	*	*	*	*	*	*

APRIL.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*

MAY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	*

JUNE.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

TUESDAY-TUESDAY

JULY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	*	*	*

AUGUST.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

SEPTEMBER.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*
*	*	*	*	*	*	*

OCTOBER.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	*	*

NOVEMBER.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

DECEMBER.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	*	*	*	*
*	*	*	*	*	*	*

Perpetual Calendar

WEDNESDAY-WEDNESDAY

WEDNESDAY-WEDNESDAY

JANUARY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	*

FEBRUARY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	*
*	*	*	*	*	*	*

MARCH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	*	*	*	*	*

APRIL.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

MAY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
*	*	*	*	*	*	*

JUNE.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

JULY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	*	*

AUGUST.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	*	*	*	*	*	*

SEPTEMBER.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*
*	*	*	*	*	*	*

OCTOBER.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	*

NOVEMBER.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

DECEMBER.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	*	*	*

Perpetual Calendar

THURSDAY-THURSDAY

JANUARY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

FEBRUARY.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
*	*	*	*	*	*	*
*	*	*	*	*	*	*

MARCH.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	*	*	*	*

APRIL.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

MAY.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	*	*	*	*	*	*

JUNE.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*

THURSDAY-THURSDAY

JULY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	*

AUGUST.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	*	*	*	*	*

SEPTEMBER.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

OCTOBER.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

NOVEMBER.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*
*	*	*	*	*	*	*

DECEMBER.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	*	*

Perpetual Calendar

FRIDAY-FRIDAY

JANUARY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	*	*	*	*	*	*

FEBRUARY.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	*	*	*	*	*	*

MARCH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	*	*	*

APRIL.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*
*	*	*	*	*	*	*

MAY.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	*	*	*	*	*

JUNE.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

FRIDAY-FRIDAY

JULY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
*	*	*	*	*	*	*

AUGUST.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	*	*	*	*

SEPTEMBER.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

OCTOBER.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	*	*	*	*	*	*

NOVEMBER.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*
*	*	*	*	*	*	*

DECEMBER.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	*

Perpetual Calendar

SATURDAY-SATURDAY

JANUARY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	*	*	*	*	*

FEBRUARY.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	*	*	*	*	*

MARCH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	*	*

APRIL.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
*	*	*	*	*	*	*

MAY.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	*	*	*	*

JUNE.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

SATURDAY-SATURDAY

JULY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	*	*	*	*	*	*

AUGUST.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	*	*	*

SEPTEMBER.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*

OCTOBER.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	*	*	*	*	*

NOVEMBER.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

DECEMBER.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Perpetual Calendar

Calendar for the year A. D. 1582.

JANUARY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	*	*	*

FEBRUARY.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	*	*	*

MARCH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
*	*	*	*	*	*	*

APRIL.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

MAY.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	*	*

JUNE.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

JULY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	*	*	*	*

AUGUST.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	*

SEPTEMBER.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

OCTOBER.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*

NOVEMBER.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*

DECEMBER.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	*

* Ten days have been suppressed in order to bring the equinox on the 21st of March.

Perpetual Calendar

For Leap-Years.

SUNDAY-MONDAY

JANUARY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	*	*	*	*

FEBRUARY.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	*	*	*

MARCH.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
*	*	*	*	*	*	*

APRIL.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

MAY.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	*	*

JUNE.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
*	*	*	*	*	*	*

SUNDAY-MONDAY

JULY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	*	*	*	*

AUGUST.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	*

SEPTEMBER.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

OCTOBER.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	*	*	*

NOVEMBER.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*

DECEMBER.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	*	*	*	*	*

Perpetual Calendar

For Leap-Years.

MONDAY-TUESDAY

JANUARY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	*	*	*

FEBRUARY.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	*	*

MARCH.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	*	*	*	*	*	*

APRIL.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*

MAY.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	*

JUNE.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

MONDAY-TUESDAY

JULY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	*	*	*

AUGUST.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

SEPTEMBER.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*
*	*	*	*	*	*	*

OCTOBER.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	*	*

NOVEMBER.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

DECEMBER.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	*	*	*	*
*	*	*	*	*	*	*

Perpetual Calendar

For Leap-Years.

TUESDAY-WEDNESDAY

JANUARY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	*	*

FEBRUARY.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	*
*	*	*	*	*	*	*

MARCH.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	*	*	*	*	*

APRIL.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

MAY.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
*	*	*	*	*	*	*

JUNE.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*

TUESDAY-WEDNESDAY

JULY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	*	*

AUGUST.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	*	*	*	*	*	*

SEPTEMBER.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*
*	*	*	*	*	*	*

OCTOBER.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	*

NOVEMBER.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

DECEMBER.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	*	*	*

Perpetual Calendar

For Leap-Years.

WEDNESDAY-THURSDAY

JANUARY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	*

FEBRUARY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
*	*	*	*	*	*	*

MARCH.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	*	*	*	*

APRIL.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

MAY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	*	*	*	*	*	*

JUNE.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*

WEDNESDAY-THURSDAY

JULY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	*

AUGUST.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	*	*	*	*	*

SEPTEMBER.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

OCTOBER.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

NOVEMBER.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	*	*	*	*	*
*	*	*	*	*	*	*

DECEMBER.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	*	*

Perpetual Calendar

For Leap-Years.

THURSDAY-FRIDAY

JANUARY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
*	*	*	*	*	*	*

FEBRUARY.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	*	*	*	*	*	*

MARCH.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	*	*	*

APRIL.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*
*	*	*	*	*	*	*

MAY.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	*	*	*	*	*

JUNE.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

THURSDAY-FRIDAY

JULY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
*	*	*	*	*	*	*

AUGUST.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	*	*	*	*

SEPTEMBER.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

OCTOBER.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	*	*	*	*	*	*

NOVEMBER.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	*	*	*	*
*	*	*	*	*	*	*

DECEMBER.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	*

Perpetual Calendar

FRIDAY-SATURDAY

FRIDAY-SATURDAY

For Leap-Years.

JANUARY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	*	*	*	*	*	*

JULY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	*	*	*	*	*	*

FEBRUARY.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	*	*	*	*	*

AUGUST.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	*	*	*

MARCH.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	*	*

SEPTEMBER.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*

APRIL.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
*	*	*	*	*	*	*

OCTOBER.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	*	*	*	*	*

MAY.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	*	*	*	*

NOVEMBER.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	*	*	*

JUNE.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

DECEMBER.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Perpetual Calendar

SATURDAY-SUNDAY

SATURDAY-SUNDAY

For Leap-Years.

JANUARY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	*	*	*	*	*

FEBRUARY.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	*	*	*	*

MARCH.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	*
*	*	*	*	*	*	*

APRIL.

*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	*	*	*	*	*	*

MAY.

*	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	*	*	*

JUNE.

*	*	*	*	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	*
*	*	*	*	*	*	*

JULY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
*	*	*	*	*	*	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	*	*	*	*	*

AUGUST.

*	*	1	2	3	4	5
6	7	8	9	10	11	12
14	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	*	*

SEPTEMBER.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
*	*	*	*	*	*	*

OCTOBER.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	*	*	*	*
*	*	*	*	*	*	*

NOVEMBER.

*	*	*	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	*	*

DECEMBER.

*	*	*	*	*	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	*	*	*	*	*	*

Tables

Indicating the days on which each year begins and ends, with its golden number, its epact, its Dominical letter and its solar cycle, from the Reformation of the calendar made by Julius Caesar in the year of the world 3956, or the 45th year before Jesus Christ.

BEGINS.	B. C.	ENDS.	G. N.	Epacts.	D. L.	S. C.
45 Monday.....	3956	Saturday.....	14	IV	B.	21
44 Sunday.....	3957	.....	15	XV	A.	22
43 Monday.....	3958	.....	16	XXVI	G.	23
42 Tuesday.....	3959	.....	17	VII	F.	24
41 Wednesday...	3960	Thursday....	18	XVIII	E. D.	25
40 Friday.....	3961	.....	19	XXIX	C.	26
39 Saturday.....	3962	.....	1	XI	B.	27
38 Sunday.....	3963	.....	2	XXII	A.	28
37 Monday.....	3964	Tuesday.....	3	III	G. F.	1
36 Wednesday...	3965	.....	4	XIV	E.	2
35 Thursday....	3966	.....	5	XXV	D.	3
34 Friday.....	3967	.....	6	VI	C.	4
33 Saturday.....	3968	Sunday.....	7	XVII	B. A.	5
32 Monday.....	3969	.....	8	XXVIII	G.	6
31 Tuesday.....	3970	.....	9	IX	F.	7
30 Wednesday...	3971	.....	10	XX	E.	8
29 Thursday....	3972	Friday.....	11	I	D. C.	9
28 Saturday.....	3973	.....	12	XII	B.	10
27 Sunday.....	3974	.....	13	XXIII	A.	11
26 Monday.....	3975	.....	14	IV	G.	12
25 Tuesday.....	3976	Wednesday..	15	XV	F. E.	13
24 Thursday....	3977	.....	16	XXVI	D.	14
23 Friday.....	3978	.....	17	VII	C.	15
22 Saturday.....	3979	.....	18	XVIII	B.	16
21 Sunday.....	3980	Monday.....	19	XXIX	A. G.	17
20 Tuesday.....	3981	.....	1	XI	F.	18
19 Wednesday...	3982	.....	2	XXII	E.	19
18 Thursday....	3983	.....	3	III	D.	20
17 Friday.....	3984	Saturday....	4	XIV	C. B.	21
16 Sunday.....	3985	.....	5	XXV	A.	22
15 Monday.....	3986	.....	6	VI	G.	23
14 Tuesday.....	3987	.....	7	XVII	F.	24
13 Wednesday..	3988	Thursday....	8	XXVIII	E. D.	25
12 Friday.....	3989	.....	9	IX	C.	26
11 Saturday....	3990	.....	10	XX	B.	27
10 Sunday.....	3991	.....	11	I	A.	28
9 Monday.....	3992	Tuesday.....	12	XII	G. F.	1
8 Wednesday...	3993	.....	13	XXIII	E.	2
7 Thursday....	3994	.....	14	IV	D.	3
6 Friday.....	3995	.....	15	XV	C.	4
5 Saturday.....	3996	Sunday.....	16	XXVI	B. A.	5

Tables—(Continued).

BEGINS.	B. C.	ENDS.	G. N.	Epacts.	D. L.	S. C.
4 Monday.....	3997	.....	17	VII	G.	6
3 Tuesday.....	3998	.....	18	XVIII	F.	7
2 Wednesday...	3999	.....	19	XXIX	E.	8
1 Thursday	4000	Friday.....	1	XI	D. C.	9
Saturday.....	1A. D	.....	2	XXII	B.	10
Sunday.....	2	.....	3	III	A.	11
Monday.....	3	.....	4	XIV	G.	12
Tuesday.....	4	Wednesday...	5	XXV	F. E.	13
Thursday.....	5	.....	6	VI	D.	14
Friday.....	6	.....	7	XVII	C.	15
Saturday.....	7	.....	8	XXVIII	B.	16
Sunday.....	8	Monday.....	9	IX	A. G.	17
Tuesday.....	9	.....	10	XX	F.	18
Wednesday.....	10	.....	11	I	E.	19
Thursday.....	11	.....	12	XII	D.	20
Friday.....	12	Saturday.....	13	XXIII	C. B.	21
Sunday.....	13	.....	14	IV	A.	22
Monday.....	14	.....	15	XV	G.	23
Tuesday.....	15	.....	16	XXVI	F.	24
Wednesday.....	16	Thursday.....	17	VII	E. D.	25
Friday.....	17	.....	18	XVIII	C.	26
Saturday.....	18	.....	19	XXIX	B.	27
Sunday.....	19	.....	1	XI	A.	28
Monday.....	20	Tuesday.....	2	XXII	G. F.	1
Wednesday.....	21	.....	3	III	E.	2
Thursday.....	22	.....	4	XIV	D.	3
Friday.....	23	.....	5	XXV	C.	4
Saturday.....	24	Sunday.....	6	VI	B. A.	5
Monday.....	25	.....	7	XVII	G.	6
Tuesday.....	26	.....	8	XXVIII	F.	7
Wednesday.....	27	.....	9	IX	E.	8
Thursday.....	28	Friday.....	10	XX	D. C.	9
Saturday.....	29	.....	11	I	B.	10
Sunday.....	30	.....	12	XII	A.	11
Monday.....	31	.....	13	XXIII	G.	12
Tuesday.....	32	Wednesday...	14	IV	F. E.	13
Thursday.....	33	.....	15	XV	D.	14
Friday.....	34	.....	16	XXVI	C.	15
Saturday.....	35	.....	17	VII	B.	16
Sunday.....	36	Monday.....	18	XVIII	A. G.	17
Tuesday.....	37	.....	19	XXIX	F.	18
Wednesday...	38	.....	1	XI	E.	19
Thursday.....	39	.....	2	XXII	D.	20
Friday.....	40	Saturday.....	3	III	C. B.	21
Sunday.....	41	.....	4	XIV	A.	22
Monday.....	42	.....	5	XXV	G.	23
Tuesday.....	42	.....	6	VI	F.	24

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Wednesday .	44	Thursday . . .	7	XVII	E. D.	25
Friday . . .	45	.....	8	XXVIII	C.	26
Saturday . . .	46	.....	9	IX	B.	27
Sunday	47	.....	10	XX	A.	28
Monday . . .	48	Tuesday . . .	11	I	G. F.	1
Wednesday .	49	.....	12	XII	E.	2
Thursday . . .	50	.....	13	XXIII	D.	3
Friday	51	.....	14	IV	C.	4
Saturday . . .	52	Sunday . . .	15	XV	B. A.	5
Monday	53	.....	16	XXVI	G.	6
Tuesday . . .	54	.....	17	VII	F.	7
Wednesday .	55	.....	18	XVIII	E.	8
Thursday . . .	56	Friday	19	XXIX	D. C.	9
Saturday . . .	57	.....	1	XI	B.	10
Sunday	58	.....	2	XXII	A.	11
Monday	59	.....	3	III	G.	12
Tuesday . . .	60	Wednesday .	4	XIV	F. E.	13
Thursday . . .	61	.....	5	XXV	D.	14
Friday	62	.....	6	VI	C.	15
Saturday . . .	63	.....	7	XVI	B.	16
Sunday	64	Monday	8	XXVIII	A. G.	17
Tuesday . . .	65	.....	9	IX	F.	18
Wednesday .	66	.....	10	XX	E.	19
Thursday . . .	67	.....	11	I	D.	20
Friday	68	Saturday . . .	12	XII	C. B.	21
Sunday	69	.....	13	XXIII	A.	22
Monday	70	.....	14	IV	G.	23
Tuesday . . .	71	.....	15	XV	F.	24
Wednesday .	72	Thursday . . .	16	XXVI	E. D.	25
Friday	73	.....	17	VII	C.	26
Saturday . . .	74	.....	18	XVIII	B.	27
Sunday	75	.....	19	XXIX	A.	28
Monday	76	Tuesday . . .	1	XI	G. F.	1
Wednesday .	77	.....	2	XXII	E.	2
Thursday . . .	78	.....	3	III	D.	3
Friday	79	.....	4	XIV	C.	4
Saturday . . .	80	Sunday	5	XXV	B. A.	5
Monday	81	.....	6	VI	G.	6
Tuesday . . .	82	.....	7	XVII	F.	7
Wednesday .	83	.....	8	XXVIII	E.	8
Thursday . . .	84	Friday	9	IX	D. C.	9
Saturday . . .	85	.....	10	XX	B.	10
Sunday	86	.....	11	I	A.	11
Monday	87	.....	12	XII	G.	12
Tuesday . . .	88	Wednesday . .	13	XXIII	F. E.	13
Thursday . . .	89	.....	14	IV	D.	14
Friday	90	.....	15	XV	C.	15

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Saturday ...	91	.....	16	XXVI	B.	16
Sunday	92	Monday	17	VII	A. G.	17
Tuesday	93	.....	18	XVIII	F.	18
Wednesday ..	94	.....	19	XXIX	E.	19
Thursday ...	95	.....	1	XI	D.	20
Friday	96	Saturday ...	2	XXII	C. B.	21
Sunday	97	.....	3	III	A.	22
Monday	98	.....	4	XIV	G.	23
Tuesday	99	.....	5	XXV	F.	24
Wednesday ..	100	Thursday ...	6	VI	E. D.	25
Friday	101	.....	7	XVII	C.	26
Saturday	102	.....	8	XXVIII	B.	27
Sunday	103	.....	9	IX	A.	28
Monday	104	Tuesday	10	XX	G. F.	1
Wednesday ..	105	.....	11	I	E.	2
Thursday ...	106	.....	12	XII	D.	3
Friday	107	.....	13	XXIII	C.	4
Saturday ...	108	Sunday ...	14	IV	B. A.	5
Monday	109	.....	15	XV	G.	6
Tuesday	110	.....	16	XXVI	F.	7
Wednesday ..	111	.....	17	VII	E.	8
Thursday ...	112	Friday	18	XVIII	D. C.	9
Saturday ...	113	.....	19	XXIX	B.	10
Sunday	114	.....	1	XI	A.	11
Monday	115	.....	2	XXII	G.	12
Tuesday	116	Wednesday ..	3	III	F. E.	13
Thursday ...	117	.....	4	XIV	D.	14
Friday	118	.....	5	XXV	C.	15
Saturday ...	119	.....	6	VI	B.	16
Sunday	120	Monday	7	XVII	A. G.	17
Tuesday	121	.....	8	XXVIII	F.	18
Wednesday ..	122	.....	9	IX	E.	19
Thursday ...	123	.....	10	XX	D.	20
Friday	124	Saturday ...	11	I	C. B.	21
Sunday	125	.....	12	XII	A.	22
Monday	126	.....	13	XXIII	G.	23
Tuesday	127	.....	14	IV	F.	24
Wednesday ..	128	Thursday ...	15	XV	E. D.	25
Friday	129	.....	16	XXVI	C.	26
Saturday ...	130	.....	17	VII	B.	27
Sunday	131	.....	18	XVIII	A.	28
Monday	132	Tuesday	19	XXIX	G. F.	1
Wednesday ..	133	.....	1	XI	E.	2
Thursday ...	134	.....	2	XXII	D.	3
Friday	135	.....	3	III	C.	4
Saturday ...	136	Sunday	4	XIV	B. A.	5
Monday	137	.....	5	XXV	G.	6

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Tuesday....	138	.....	6	VI	F.	7
Wednesday..	139	.....	7	XVII	E.	8
Thursday...	140	Friday.....	8	XXVIII	D. C.	9
Saturday...	141	.....	9	IX	B.	10
Sunday.....	142	.....	10	XX	A.	11
Monday.....	143	.....	11	I	G.	12
Tuesday...	144	Wednesday..	12	XII	F. E.	13
Thursday...	145	.....	13	XXIII	D.	14
Friday.....	146	.....	14	IV	C.	15
Saturday...	147	.....	15	XV	B.	16
Sunday.....	148	Monday...	16	XXVI	A. G.	17
Tuesday....	149	.....	17	VII	F.	18
Wednesday..	150	.....	18	XVIII	E.	19
Thursday...	151	.....	19	XXIX	D.	20
Friday.....	152	Saturday...	1	XI	C. B.	21
Sunday.....	153	.....	2	XXII	A.	22
Monday.....	154	.....	3	III	G.	23
Tuesday....	155	.....	4	XIV	F.	24
Wednesday..	156	Thursday...	5	XXV	E. D.	25
Friday.....	157	.....	6	VI	C.	26
Saturday...	158	.....	7	XVII	B.	27
Sunday.....	159	.....	8	XXVIII	A.	28
Monday....	160	Tuesday....	9	IX	G. F.	1
Wednesday..	161	.....	10	XX	E.	2
Thursday...	162	.....	11	I	D.	3
Friday.....	163	.....	12	XII	C.	4
Saturday...	164	Sunday.....	13	XXIII	B. A.	5
Monday....	165	.....	14	IV	G.	6
Tuesday....	166	.....	15	XV	F.	7
Wednesday..	167	.....	16	XXVI	E.	8
Thursday...	168	Friday.....	17	VII	D. C.	9
Saturday...	169	.....	18	XVIII	B.	10
Sunday.....	170	.....	19	XXIX	A.	11
Monday....	171	.....	1	XI	G.	12
Tuesday....	172	Wednesday..	2	XXII	F. E.	13
Thursday...	173	.....	3	III	D.	14
Friday.....	174	.....	4	XIV	C.	15
Saturday...	175	.....	5	XXV	B.	16
Sunday.....	176	Monday....	6	VI	A. G.	17
Tuesday....	177	.....	7	XVII	F.	18
Wednesday..	178	.....	8	XXVIII	E.	19
Thursday...	179	.....	9	IX	D.	20
Friday.....	180	Saturday....	10	XX	C. B.	21
Sunday.....	181	.....	11	I	A.	22
Monday....	182	.....	12	XII	G.	23
Tuesday....	183	.....	13	XXIII	F.	24
Wednesday..	184	Thursday...	14	IV	E. D.	25

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Friday.	185	.....	15	XV	C.	26
Saturday ...	186	.....	16	XXVI	B.	27
Sunday.	187	.....	17	VII	A.	28
Monday ...	188	Tuesday.	18	XVIII	G. F.	1
Wednesday ...	189	.....	19	XXIX	E.	2
Thursday ...	190	.....	1	XI	D.	3
Friday.	191	.....	2	XXII	C.	4
Saturday ...	192	Sunday.	3	III	B. A.	5
Monday ...	193	.....	4	XIV	G.	6
Tuesday ...	194	.....	5	XXV	F.	7
Wednesday ...	195	.....	6	VI	E.	8
Thursday ...	196	Friday.	7	XVII	D. C.	9
Saturday ...	197	.....	8	XXVIII	B.	10
Sunday.	198	.....	9	IX	A.	11
Monday ...	199	.....	10	XX	G.	12
Tuesday ...	200	Wednesday.	11	I	F. E.	13
Thursday ...	201	.....	12	XII	D.	14
Friday.	202	.....	13	XXIII	C.	15
Saturday ...	203	.....	14	IV	B.	16
Sunday.	204	Monday.	15	XV	A. G.	17
Tuesday ...	205	.....	16	XXVI	F.	18
Wednesday ...	206	.....	17	VII	E.	19
Thursday ...	207	.....	18	XVIII	D.	20
Friday.	208	Saturday ...	19	XXIX	C. B.	21
Sunday.	209	.....	1	XI	A.	22
Monday ...	210	.....	2	XXII	G.	23
Tuesday ...	211	.....	3	III	F.	24
Wednesday ...	212	Thursday.	4	XIV	E. D.	25
Friday.	213	.....	5	XXV	C.	26
Saturday ...	214	.....	6	VI	B.	27
Sunday.	215	.....	7	XVII	A.	28
Monday ...	216	Tuesday.	8	XXVIII	G. F.	1
Wednesday ...	217	.....	9	IX	E.	2
Thursday ...	218	.....	10	XX	D.	3
Friday.	219	.....	11	I	C.	4
Saturday ...	220	Sunday.	12	XII	B. A.	5
Monday ...	221	.....	13	XXIII	G.	6
Tuesday ...	222	.....	14	IV	F.	7
Wednesday ...	223	.....	15	XV	E.	8
Thursday ...	224	Friday.	16	XXVI	D. C.	9
Saturday ...	225	.....	17	VII	B.	10
Sunday.	226	.....	18	XVIII	A.	11
Monday.	227	.....	19	XXIX	G.	12
Tuesday ...	228	Wednesday.	1	XI	F. E.	13
Thursday ...	229	.....	2	XXII	D.	14
Friday.	230	.....	3	III	C.	15
Saturday ...	231	.....	4	XIV	B.	16

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Sunday	232	Monday	5	XXV	A. G.	17
Tuesday	233	.....	6	VI	F.	18
Wednesday . . .	234	.....	7	XVII	E.	19
Thursday	235	.....	8	XXVIII	D.	20
Friday	236	Saturday	9	IX	C. B.	21
Sunday	237	.....	10	XX	A.	22
Monday	238	.....	11	I	G.	23
Tuesday	239	.....	12	XII	F.	24
Wednesday . . .	240	Thursday	13	XXIII	E. D.	25
Friday	241	.....	14	IV	C.	26
Saturday	242	.....	15	XV	B.	27
Sunday	243	.....	16	XXVI	A.	28
Monday	244	Tuesday	17	VII	G. F.	1
Wednesday . . .	245	.....	18	XVIII	E.	2
Thursday	246	.....	19	XXIX	D.	3
Friday	247	.....	1	XI	C.	4
Saturday	248	Sunday	2	XXII	B. A.	5
Monday	249	.....	3	III	G.	6
Tuesday	250	.....	4	XIV	F.	7
Wednesday . . .	251	.....	5	XXV	E.	8
Thursday	252	Friday	6	VI	D. C.	9
Saturday	253	.....	7	XVII	B.	10
Sunday	254	.....	8	XXVIII	A.	11
Monday	255	.....	9	IX	G.	12
Tuesday	256	Wednesday . . .	10	XX	F. E.	13
Thursday	257	.....	11	I	D.	14
Friday	258	.....	12	XII	C.	15
Saturday	259	.....	13	XXIII	B.	16
Sunday	260	Monday	14	IV	A. G.	17
Tuesday	261	.....	15	XV	F.	18
Wednesday . . .	262	.....	16	XXVI	E.	19
Thursday	263	.....	17	VII	D.	20
Friday	264	Saturday	18	XVIII	C. B.	21
Sunday	265	.....	19	XXIX	A.	22
Monday	266	.....	1	XI	G.	23
Tuesday	267	.....	2	XXII	F.	24
Wednesday . . .	268	Thursday	3	III	E. D.	25
Friday	269	.....	4	XIV	C.	26
Saturday	270	.....	5	XXV	B.	27
Sunday	271	.....	6	VI	A.	28
Monday	272	Tuesday	7	XVII	G. F.	1
Wednesday . . .	273	.....	8	XXVIII	E.	2
Thursday	274	.....	9	IX	D.	3
Friday	275	.....	10	XX	C.	4
Saturday	276	Sunday	11	I	B. A.	5
Monday	277	.....	12	XII	G.	6
Tuesday	278	.....	13	XXIII	F.	7

Tables—(Continued).

BEGINS.	A.D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Wednesday .	279	.....	14	IV	E.	8
Thursday...	280	Friday.....	15	XV	D. C.	9
Saturday...	281	.....	16	XXVI	B.	10
Sunday	282	.....	17	VII	A.	11
Monday	283	.....	18	XVIII	G.	12
Tuesday ...	284	Wednesday..	19	XXIX	F. E.	13
Thursday...	285	.....	1	XI	D.	14
Friday.....	286	.....	2	XXII	C.	15
Saturday ...	287	.....	3	III	B.	16
Sunday	288	Monday	4	XIV	A. G.	17
Tuesday ...	289	.....	5	XXV	F.	18
Wednesday..	290	.....	6	VI	E.	19
Thursday...	291	.....	7	XVII	D.	20
Friday.....	292	Saturday....	8	XXVIII	C. B.	21
Sunday	293	.....	9	IX	A.	22
Monday ...	294	.....	10	XX	G.	23
Tuesday...	295	.....	11	I	F.	24
Wednesday .	296	Thursday. .	12	XII	E. D.	25
Friday. . .	297	.....	13	XXIII	C.	26
Saturday ...	298	.....	14	IV	B.	27
Sunday	299	.....	15	XV	A.	28
Monday	300	Tuesday	16	XXVI	G. F.	1
Wednesday .	301	.....	17	VII	E.	2
Thursday...	302	.....	18	XVIII	D.	3
Friday.....	303	.....	19	XXIX	C.	4
Saturday ...	304	Sunday.....	1	XI	B. A.	5
Monday	305	.....	2	XXII	G.	6
Tuesday...	306	.....	3	III	F.	7
Wednesday .	307	.....	4	XIV	E.	8
Thursday...	308	Friday.....	5	XXV	D. C.	9
Saturday ...	309	.....	6	VI	B.	10
Sunday	310	.....	7	XVII	A.	11
Monday ...	311	.....	8	XXVIII	G.	12
Tuesday...	312	Wednesday..	9	IX	F. E.	13
Thursday...	313	.....	10	XX	D.	14
Friday.....	314	.....	11	I	C.	15
Saturday ...	315	.....	12	XII	B.	16
Sunday	316	Monday	13	XXIII	A. G.	17
Tuesday...	317	.....	14	IV	F.	18
Wednesday..	318	.....	15	XV	E.	19
Thursday...	319	.....	16	XXVI	D.	20
Friday.....	320	Saturday ...	17	VII	C. B.	21
Sunday	321	.....	18	XVIII	A.	22
Monday ...	322	.....	19	XXIX	G.	23
Tuesday	323	.....	1	XI	F.	24
Wednesday .	324	Thursday...	2	XXII	E. D.	25
Friday.....	325	.....	3	III	C.	26

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Saturday ...	326	.....	4	XIV	B.	27
Sunday	327	.....	5	XXV	A.	28
Monday	328	Tuesday	6	VI	G. F.	1
Wednesday ..	329	.....	7	XVII	E.	2
Thursday	330	.....	8	XXVIII	D.	3
Friday	331	.....	9	IX	C.	4
Saturday	332	Sunday	10	XX	B. A.	5
Monday	333	.....	11	I	G.	6
Tuesday	334	.....	12	XII	F.	7
Wednesday ..	335	.....	13	XXIII	E.	8
Thursday	336	Friday	14	IV	D. C.	9
Saturday	337	.....	15	XV	B.	10
Sunday	338	.....	16	XXVI	A.	11
Monday	339	.....	17	VII	G.	12
Tuesday	340	Wednesday ..	18	XVIII	F. E.	13
Thursday	341	.....	19	XXIX	D.	14
Friday	342	.....	1	XI	C.	15
Saturday	343	.....	2	XXII	B.	16
Sunday	344	Monday	3	III	A. G.	17
Tuesday	345	.....	4	XIV	F.	18
Wednesday ..	346	.....	5	XXV	E.	19
Thursday	347	.....	6	VI	D.	20
Friday	348	Saturday	7	XVII	C. B.	21
Sunday	349	.....	8	XXVIII	A.	22
Monday	350	.....	9	IX	G.	23
Tuesday	351	.....	10	XX	F.	24
Wednesday ..	352	Thursday	11	I	E. D.	25
Friday	353	.....	12	XII	C.	26
Saturday	354	.....	13	XXIII	B.	27
Sunday	355	.....	14	IV	A.	28
Monday	356	Tuesday	15	XV	G. F.	1
Wednesday ..	357	.....	16	XXVI	E.	2
Thursday	358	.....	17	VII	D.	3
Friday	359	.....	18	XVIII	C.	4
Saturday	360	Sunday	19	XXIX	B. A.	5
Monday	361	.....	1	XI	G.	6
Tuesday	362	.....	2	XXII	F.	7
Wednesday ..	363	.....	3	III	E.	8
Thursday	364	Friday	4	XIV	D. C.	9
Saturday	365	.....	5	XXV	B.	10
Sunday	366	.....	6	VI	A.	11
Monday	367	.....	7	XVII	G.	12
Tuesday	368	Wednesday ..	8	XXVIII	F. E.	13
Thursday	369	.....	9	IX	D.	14
Friday	370	.....	10	XX	C.	15
Saturday	371	.....	11	I	B.	16
Sunday	372	Monday	12	XII	A. G.	17

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. O:
Tuesday	373	.....	13	XXIII	F.	18
Wednesday .	374	.....	14	IV	E	19
Thursday...	375	.....	15	XV	D.	20
Friday.....	376	Saturday...	16	XXVI	C. B.	21
Sunday.....	377	.....	17	VII	A.	22
Monday. . .	378	.....	18	XVIII	G.	23
Tuesday	379	.....	19	XXIX	F.	24
Wednesday .	380	Thursday...	1	XI	E. D.	25
Friday.....	381	.....	2	XXII	C.	26
Saturday....	382	.....	3	III	B.	27
Sunday.....	383	.....	4	XIV	A.	28
Monday.....	384	Tuesday	5	XXV	G. F.	1
Wednesday .	385	.....	6	VI	E.	2
Thursday...	386	.....	7	XVII	D.	3
Friday.....	387	.....	8	XXVIII	C.	4
Saturday....	388	Sunday.....	9	IX	B. A.	5
Monday.....	389	.....	10	XX	G.	6
Tuesday	390	.....	11	I	F.	7
Wednesday .	391	.....	12	XII	E.	8
Thursday...	392	Friday.....	13	XXIII	D. C.	9
Saturday....	393	.....	14	IV	B.	10
Sunday.....	394	.....	15	XV	A.	11
Monday.....	395	.....	16	XXVI	G.	12
Tuesday	396	Wednesday..	17	VII	F. E.	13
Thursday...	397	.....	18	XVIII	D.	14
Friday.....	398	.....	19	XXIX	C.	15
Saturday....	399	.....	1	XI	B.	16
Sunday.....	400	Monday	2	XXII	A. G.	17
Tuesday	401	.....	3	III	F.	18
Wednesday .	402	.....	4	XIV	E.	19
Thursday...	403	.....	5	XXV	D.	20
Friday.....	404	Saturday....	6	VI	C. B.	21
Sunday.....	405	.....	7	XVII	A.	22
Monday.....	406	.....	8	XXVIII	G.	23
Tuesday	407	.....	9	IX	F.	24
Wednesday .	408	Thursday...	10	XX	E. D.	25
Friday.....	409	.....	11	I	C.	26
Saturday....	410	.....	12	XII	B.	27
Sunday.....	411	.....	13	XXIII	A.	28
Monday.....	412	Tuesday	14	IV	G. F.	1
Wednesday .	413	.....	15	XV	E.	2
Thursday...	414	.....	16	XXVI	D.	3
Friday.....	415	.....	17	VII	C.	4
Saturday....	416	Sunday.	18	XVIII	B. A.	5
Monday.....	417	.....	19	XXIX	G.	6
Tuesday	418	.....	1	XI	F.	7
Wednesday .	419	.....	2	XXII	E.	8

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Thursday...	420	Friday.....	3	III	D. C.	9
Saturday....	421	.....	4	XIV	B.	10
Sunday.....	422	.....	5	XXV	A.	11
Monday.....	423	.....	6	VI	G.	12
Tuesday....	424	Wednesday..	7	XVII	F. E.	13
Thursday...	425	.....	8	XXVIII	D.	14
Friday.....	426	.....	9	IX	C.	15
Saturday....	427	.....	10	XX	B.	16
Sunday.....	428	Monday....	11	I	A. G.	17
Tuesday....	429	.....	12	XII	F.	18
Wednesday..	430	.....	13	XXIII	E.	19
Thursday...	431	.....	14	IV	D.	20
Friday....	432	Saturday...	15	XV	C. B.	21
Sunday.....	433	.....	16	XXVI	A.	22
Monday.....	434	.....	17	VII	G.	23
Tuesday....	435	.....	18	XVIII	F.	24
Wednesday..	436	Thursday...	19	XXIX	E. D.	25
Friday.....	437	.....	1	XI	C.	26
Saturday....	438	.....	2	XXII	B.	27
Sunday.....	439	.....	3	III	A.	28
Monday.....	440	Tuesday....	4	XIV	G. F.	1
Wednesday..	441	.....	5	XXV	E.	2
Thursday...	442	.....	6	VI	D.	3
Friday.....	443	.....	7	XVII	C.	4
Saturday....	444	Sunday.....	8	XXVIII	B. A.	5
Monday.....	445	.....	9	IX	G.	6
Tuesday....	446	.....	10	XX	F.	7
Wednesday..	447	.....	11	I	E.	8
Thursday...	448	Friday....	12	XII	D. C.	9
Saturday....	449	.....	13	XXIII	B.	10
Sunday.....	450	.....	14	IV	A.	11
Monday.....	451	.....	15	XV	G.	12
Tuesday....	452	Wednesday..	16	XXVI	F. E.	13
Thursday...	453	.....	17	VII	D.	14
Friday.....	454	.....	18	XVIII	C.	15
Saturday....	455	.....	19	XXIX	B.	16
Sunday....	456	Monday....	1	XI	A. G.	17
Tuesday....	457	.....	2	XXII	F.	18
Wednesday..	458	.....	3	III	E.	19
Thursday...	459	.....	4	XIV	D.	20
Friday.....	460	Saturday....	5	XXV	C. B.	21
Sunday.....	461	.....	6	VI	A.	22
Monday.....	462	.....	7	XVII	G.	23
Tuesday....	463	.....	8	XXVIII	F.	24
Wednesday..	464	Thursday...	9	IX	E. D.	25
Friday.....	465	.....	10	XX	C.	26
Saturday....	466	.....	11	I	B.	27

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Sunday.....	467	.....	12	XII	A.	28
Monday.....	468	Tuesday....	13	XXIII	G. F.	1
Wednesday...	469	.....	14	IV	E.	2
Thursday....	470	.....	15	XV	D.	3
Friday.....	471	.....	16	XXVI	C.	4
Saturday....	472	Sunday.....	17	VII	B. A.	5
Monday.....	473	.....	18	XVIII	G.	6
Tuesday....	474	.....	19	XXIX	F.	7
Wednesday...	475	.....	1	XI	E.	8
Thursday....	476	Friday.....	2	XXII	D. C.	9
Saturday....	477	.....	3	III	B.	10
Sunday.....	478	.....	4	XIV	A.	11
Monday.....	479	.....	5	XXV	G.	12
Tuesday....	480	Wednesday..	6	VI	F. E.	13
Thursday....	481	.....	7	XVII	D.	14
Friday.....	482	.....	8	XXVIII	C.	15
Saturday....	483	.....	9	IX	B.	16
Sunday.....	484	Monday.....	10	XX	A. G.	17
Tuesday....	485	.....	11	I	F.	18
Wednesday...	486	.....	12	XII	E.	19
Thursday....	487	.....	13	XXIII	D.	20
Friday.....	488	Saturday....	14	IV	C. B.	21
Sunday....	489	.....	15	XV	A.	22
Monday.....	490	.....	16	XXVI	G.	23
Tuesday....	491	.....	17	VII	F.	24
Wednesday...	492	Thursday....	18	XVIII	E. D.	25
Friday.....	493	.....	19	XXIX	C.	26
Saturday....	494	.....	1	XI	B.	27
Sunday.....	495	.....	2	XXII	A.	28
Monday.....	496	Tuesday....	3	III	G. F.	1
Wednesday...	497	.....	4	XIV	E.	2
Thursday....	498	.....	5	XXV	D.	3
Friday.....	499	.....	6	VI	C.	4
Saturday....	500	Sunday.....	7	XVII	B. A.	5
Monday.....	501	.....	8	XXVIII	G.	6
Tuesday....	502	.....	9	IX	F.	7
Wednesday...	503	.....	10	XX	E.	8
Thursday....	504	Friday....	11	I	D. C.	9
Saturday....	505	.....	12	XII	B.	10
Sunday.....	506	.....	13	XXIII	A.	11
Monday.....	507	.....	14	IV	G.	12
Tuesday....	508	Wednesday..	15	XV	F. E.	13
Thursday....	509	.....	16	XXVI	D.	14
Friday.....	510	.....	17	VII	C.	15
Saturday....	511	.....	18	XVIII	B.	16
Sunday.....	512	Monday....	19	XXIX	A. G.	17
Tuesday....	513	.....	1	XI	F.	18

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Wednesday .	514	.....	2	XXII	E.	19
Thursday...	515	.....	3	III	D.	20
Friday	516	Saturday...	4	XIV	C. B.	21
Sunday	517	.....	5	XXV	A.	22
Monday	518	.....	6	VI	G.	23
Tuesday....	519	.....	7	XVII	F.	24
Wednesday .	520	Thursday...	8	XXVIII	E. D.	25
Friday	521	.....	9	IX	C.	26
Saturday....	522	.....	10	XX	B.	27
Sunday	523	.....	11	II	A.	28
Monday	524	Tuesday....	12	XII	G. F.	1
Wednesday .	525	.....	13	XXIII	E.	2
Thursday...	526	.....	14	IV	D.	3
Friday	527	.....	15	XV	C.	4
Saturday....	528	Sunday.....	16	XXVI	B. A.	5
Monday	529	.....	17	VII	G.	6
Tuesday....	530	.....	18	XVIII	F.	7
Wednesday..	531	.....	19	XXIX	E.	8
Thursday...	532	Friday	1	XI	D. C.	9
Saturday ...	533	.....	2	XXII	B.	10
Sunday	534	.....	3	III	A.	11
Monday	535	.....	4	XIV	G.	12
Tuesday....	536	Wednesday..	5	XXV	F. E.	13
Thursday...	537	.....	6	VI	D.	14
Friday	538	.....	7	XVII	C.	15
Saturday....	539	.....	8	XXVIII	B.	16
Sunday	540	Monday	9	IX	A. G.	17
Tuesday....	541	.....	10	XX	F.	18
Wednesday .	542	.....	11	I	E.	19
Thursday...	543	.....	12	XII	D.	20
Friday	544	Saturday ...	13	XXIII	C. B.	21
Sunday	545	.....	14	IV	A.	22
Monday	546	.....	15	XV	G.	23
Tuesday....	547	.....	16	XXVI	F.	24
Wednesday .	548	Thursday...	17	VII	E. D.	25
Friday	549	.....	18	XVIII	C.	26
Saturday ...	550	.....	19	XXIX	B.	27
Sunday	551	.....	1	XI	A.	28
Monday	552	Tuesday....	2	XXII	G. F.	1
Wednesday .	553	.....	3	III	E.	2
Thursday...	554	.....	4	XIV	D.	3
Friday	555	.....	5	XXV	C.	4
Saturday ...	556	Sunday.....	6	VI	B. A.	5
Monday	557	.....	7	XVII	G.	6
Tuesday....	558	.....	8	XXVIII	F.	7
Wednesday .	559	.....	9	IX	E.	8
Thursday...	560	Friday.....	10	XX	D. C.	9

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Saturday ...	561	.....	11	I	B.	10
Sunday.....	562	.. .. .	12	XII	A.	11
Monday.....	563	.....	13	XXIII	G.	12
Tuesday....	564	Wednesday..	14	IV	F. E.	13
Thursday...	565	.....	15	XV	D.	14
Friday.....	566	.....	16	XXVI	C.	15
Saturday....	567	.....	17	VII	B.	16
Sunday.....	568	Monday.....	18	XVIII	A. G.	17
Tuesday....	569	.....	19	XXIX	F.	18
Wednesday..	570	.....	1	XI	E.	19
Thursday...	571	.....	2	XXII	D.	20
Friday.....	572	Saturday....	3	III	C. B.	21
Sunday.....	573	.....	4	XIV	A.	22
Monday.....	574	.....	5	XXV	G.	23
Tuesday....	575	.....	6	VI	F.	24
Wednesday..	576	Thursday...	7	XVII	E. D.	25
Friday.....	577	.....	8	XXVIII	C.	26
Saturday....	578	.....	9	IX	B.	27
Sunday.....	579	.....	10	XX	A.	28
Monday.....	580	Tuesday....	11	I	G. F.	1
Wednesday..	581	.....	12	XII	E.	2
Thursday....	582	.....	13	XXIII	D.	3
Friday.....	583	.....	14	IV	C.	4
Saturday....	584	Sunday.....	15	XV	B. A.	5
Monday.....	585	.....	16	XXVI	G.	6
Tuesday....	586	.....	17	VII	F.	7
Wednesday..	587	.....	18	XVIII	E.	8
Thursday....	588	Friday....	19	XXIX	D. C.	9
Saturday....	589	.....	1	XI	B.	10
Sunday.....	590	.....	2	XXII	A.	11
Monday.....	591	.....	3	III	G.	12
Tuesday....	592	Wednesday..	4	XIV	F. E.	13
Thursday....	593	.....	5	XXV	D.	14
Friday.....	594	.....	6	VI	C.	15
Saturday....	595	.....	7	XVII	B.	16
Sunday.....	596	Monday.....	8	XXVIII	A. G.	17
Tuesday....	597	.....	9	IX	F.	18
Wednesday..	598	.....	10	XX	E.	19
Thursday....	599	.....	11	I	D.	20
Friday.....	600	Saturday....	12	XII	C. B.	21
Sunday.....	601	.....	13	XXIII	A.	22
Monday.....	602	.....	14	IV	G.	23
Tuesday....	603	.....	15	XV	F.	24
Wednesday..	604	Thursday...	16	XXVI	E. D.	25
Friday.....	605	.....	17	VII	C.	26
Saturday....	606	.....	18	XVIII	B.	27
Sunday.....	607	.....	19	XXIX	A.	28

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Monday . . .	608	Tuesday.....	1	XI	G. F.	1
Wednesday..	609	.....	2	XXII	E.	2
Thursday...	610	.....	3	III	D.	3
Friday.....	611	.....	4	XIV	C.	4
Saturday...	612	Sunday.....	5	XXV	B. A.	5
Monday.....	613	.....	6	VI	G.	6
Tuesday....	614	.....	7	XVII	F.	7
Wednesday..	615	.....	8	XXVIII	E.	8
Thursday...	616	Friday.....	9	IX	D. C.	9
Saturday...	617	.....	10	XX	B.	10
Sunday.....	618	.....	11	I	A.	11
Monday.....	619	.....	12	XII	G.	12
Tuesday....	620	Wednesday..	13	XXIII	F. E.	13
Thursday...	621	.....	14	IV	D.	14
Friday.....	622	.....	15	XV	C.	15
Saturday...	623	.....	16	XXVI	B.	16
Sunday.....	624	Monday.....	17	VII	A. G.	17
Tuesday....	625	.....	18	XXVIII	F.	18
Wednesday..	626	.....	19	XXIX	E.	19
Thursday...	627	.....	1	XI	D.	20
Friday.....	628	Saturday....	2	XXII	C. B.	21
Sunday.....	629	.....	3	III	A.	22
Monday....	630	.....	4	XIV	G.	23
Tuesday....	631	.....	5	XXV	F.	24
Wednesday..	632	Thursday...	6	VI	E. D.	25
Friday.....	633	.....	7	XVII	C.	26
Saturday...	634	.....	8	XXVIII	B.	27
Sunday.....	635	.....	9	IX	A.	28
Monday....	636	Tuesday....	10	XX	G. F.	1
Wednesday..	637	.....	11	I	E.	2
Thursday...	638	.....	12	XII	D.	3
Friday.....	639	.....	13	XXIII	C.	4
Saturday...	640	Sunday.....	14	IV	B. A.	5
Monday....	641	.....	15	XV	G.	6
Tuesday....	642	.....	16	XXVI	F.	7
Wednesday..	643	.....	17	VII	E.	8
Thursday...	644	Friday.....	18	XXVIII	D. C.	9
Saturday...	645	.....	19	XXIX	B.	10
Sunday....	646	.....	1	XI	A.	11
Monday....	647	.....	2	XXII	G.	12
Tuesday....	648	Wednesday..	3	III	F. E.	13
Thursday...	649	.....	4	XIV	D.	14
Friday.....	650	.....	5	XXV	C.	15
Saturday...	651	.....	6	VI	B.	16
Sunday.....	652	Monday.....	7	XVII	A. G.	17
Tuesday....	653	.....	8	XXVIII	F.	18
Wednesday..	654	.....	9	IX	E.	19

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C:
Thursday...	655	.....	10	XX	D.	20
Friday.....	656	Saturday....	11	I	C. B.	21
Sunday.....	657	.....	12	XII	A.	22
Monday.....	658	.....	13	XXIII	G.	23
Tuesday....	659	.....	14	IV	F.	24
Wednesday..	660	Thursday...	15	XV	E. D.	25
Friday.....	661	.....	16	XXVI	C.	26
Saturday...	662	.....	17	VII	B.	27
Sunday.....	663	.....	18	XVIII	A.	28
Monday.....	664	Tuesday....	19	XXIX	G. F.	1
Wednesday..	665	.....	1	XI	E.	2
Thursday...	666	.....	2	XXII	D.	3
Friday.....	667	.....	3	III	C.	4
Saturday...	668	Sunday.....	4	XIV	B. A.	5
Monday.....	669	.....	5	XXV	G.	6
Tuesday....	670	.....	6	VI	F.	7
Wednesday..	671	.....	7	XVII	E.	8
Thursday...	672	Friday.....	8	XXVIII	D. C.	9
Saturday...	673	.....	9	IX	B.	10
Sunday.....	674	.....	10	XX	A.	11
Monday.....	675	.....	11	I	G.	12
Tuesday....	676	Wednesday..	12	XII	F. E.	13
Thursday...	677	.....	13	XXIII	D.	14
Friday.....	678	.....	14	IV	C.	15
Saturday...	679	.....	15	XV	B.	16
Sunday.....	680	Monday....	16	XXVI	A. G.	17
Tuesday....	681	.....	17	VII	F.	18
Wednesday..	682	.....	18	XVIII	E.	19
Thursday...	683	.....	19	XXIX	D.	20
Friday.....	684	Saturday....	1	XI	C. B.	21
Sunday.....	685	.....	2	XXII	A.	22
Monday.....	686	.....	3	III	G.	23
Tuesday....	687	.....	4	XIV	F.	24
Wednesday..	688	Thursday...	5	XXV	E. D.	25
Friday.....	689	.....	6	VI	C.	26
Saturday...	690	.....	7	XVII	B.	27
Sunday.....	691	.....	8	XXVIII	A.	28
Monday.....	692	Tuesday....	9	IX	G. F.	1
Wednesday..	693	.....	10	XX	E.	2
Thursday...	694	.....	11	I	D.	3
Friday.....	695	.....	12	XII	C.	4
Saturday...	696	Sunday.....	13	XXIII	B. A.	5
Monday.....	697	.....	14	IV	G.	6
Tuesday....	698	.....	15	XV	F.	7
Wednesday..	699	.....	16	XXVI	E.	8
Thursday...	700	Friday.....	17	VII	D. C.	9
Saturday...	701	.....	18	XVIII	B.	10

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Sunday	702	.....	19	XXIX	A.	11
Monday	703	.....	1	XI	G.	13
Tuesday	704	Wednesday..	2	XXII	F. E.	13
Thursday....	705	.....	3	III	D.	14
Friday	706	.....	4	XIV	C.	15
Saturday	707	.....	5	XXV	B.	16
Sunday	708	Monday	6	VI	A. G.	17
Tuesday	709	.....	7	XVII	F.	18
Wednesday..	710	.....	8	XXVIII	E.	19
Thursday....	711	.....	9	IX	D.	20
Friday	712	Saturday....	10	XX	C. B.	21
Sunday	713	.....	11	I	A.	22
Monday	714	.....	12	XII	G.	23
Tuesday	715	.....	13	XXIII	F.	24
Wednesday..	716	Thursday ..	14	IV	E. D.	25
Friday	717	.....	15	XV	C.	26
Saturday	718	.....	16	XXVI	B.	27
Sunday	719	.....	17	VII	A.	28
Monday	720	Tuesday	18	XVIII	G. F.	1
Wednesday..	721	.....	19	XXIX	E.	2
Thursday....	722	.....	1	XI	D.	3
Friday	723	.....	2	XXII	C.	4
Saturday	724	Sunday	3	III	B. A.	5
Monday	725	.....	4	XIV	G.	6
Tuesday	726	.....	5	XXV	F.	7
Wednesday..	727	.....	6	VI	E.	8
Thursday....	728	Friday	7	XVII	D. C.	9
Saturday	729	.....	8	XXVIII	B.	10
Sunday	730	.....	9	IX	A.	11
Monday	731	.....	10	XX	G.	12
Tuesday	732	Wednesday..	11	I	F. E.	13
Thursday....	733	.....	12	XII	D.	14
Friday	734	.....	13	XXIII	C.	15
Saturday	735	.....	14	IV	B.	16
Sunday	736	Monday	15	XV	A. G.	17
Tuesday	737	.....	16	XXVI	F.	18
Wednesday..	738	.....	17	VII	E.	19
Thursday....	739	.....	18	XVIII	D.	20
Friday	740	Saturday	19	XXIX	C. B.	21
Sunday	741	.....	1	XI	A.	22
Monday	742	.....	2	XXII	G.	23
Tuesday	743	.....	3	III	F.	24
Wednesday..	744	Thursday....	4	XIV	E. D.	25
Friday	745	.....	5	XXV	C.	26
Saturday	746	.....	6	VI	B.	27
Sunday	747	.....	7	XVII	A.	28
Monday	748	Tuesday	8	XXVIII	G. F.	1

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Wednesday .	749	.....	9	IX	E.	2
Thursday...	750	.....	10	XX	D.	3
Friday.....	751	.....	11	I	C.	4
Saturday...	752	Sunday.....	12	XII	B. A.	5
Monday...	753	.....	13	XXIII	G.	6
Tuesday...	754	.....	14	IV	F.	7
Wednesday .	755	.....	15	XV	E.	8
Thursday...	756	Friday.....	16	XXVI	D. C.	9
Saturday...	757	.....	17	VII	B.	10
Sunday.....	758	.....	18	XVIII	A.	11
Monday.....	759	.....	19	XXIX	G.	12
Tuesday...	760	Wednesday..	1	XI	F. E.	13
Thursday...	761	.....	2	XXII	D.	14
Friday.....	762	.....	3	III	C.	15
Saturday...	763	.....	4	XIV	B.	16
Sunday.....	764	Monday.....	5	XXV	A. G.	17
Tuesday...	765	.....	6	VI	F.	18
Wednesday .	766	.....	7	XVII	E.	19
Thursday...	767	.....	8	XXVIII	D.	20
Friday.....	768	Saturday....	9	IX	C. B.	21
Sunday.....	769	.....	10	XX	A.	22
Monday.....	770	.....	11	I	G.	23
Tuesday...	771	.....	12	XII	F.	24
Wednesday .	772	Thursday...	13	XXIII	E. D.	25
Friday.....	773	.....	14	IV	C.	26
Saturday...	774	.....	15	XV	B.	27
Sunday.....	775	.....	16	XXVI	A.	28
Monday.....	776	Tuesday....	17	VII	G. F.	1
Wednesday .	777	.....	18	XVIII	E.	2
Thursday...	778	.....	19	XXIX	D.	3
Friday.....	779	.....	1	XI	C.	4
Saturday...	780	Sunday.....	2	XXII	B. A.	5
Monday.....	781	.....	3	III	G.	6
Tuesday...	782	.....	4	XIV	F.	7
Wednesday .	783	.....	5	XXV	E.	8
Thursday...	784	Friday.....	6	VI	D. C.	9
Saturday...	785	.....	7	XVII	B.	10
Sunday.....	786	.....	8	XXVIII	A.	11
Monday.....	787	.....	9	IX	G.	12
Tuesday...	788	Wednesday..	10	XX	F. E.	13
Thursday...	789	.....	11	I	D.	14
Friday.....	790	.....	12	XII	C.	15
Saturday...	791	.....	13	XXIII	B.	16
Sunday.....	792	Monday.....	14	IV	A. G.	17
Tuesday...	793	.....	15	XV	F.	18
Wednesday .	794	.....	16	XXVI	E.	19
Thursday...	795	.....	17	VII	D.	20

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Friday.....	796	Saturday....	18	XVIII	C. B.	21
Sunday.....	797	.....	19	XXIX	A.	22
Monday.....	798	.....	1	XI	G.	23
Tuesday.....	799	.....	2	XXII	F.	24
Wednesday..	800	Thursday....	3	III	E. D.	25
Friday.....	801	.....	4	XIV	C.	26
Saturday....	802	.....	5	XXV	B.	27
Sunday.....	803	.....	6	VI	A.	28
Monday.....	804	Tuesday....	7	XVII	G. F.	1
Wednesday..	805	.....	8	XXVIII	E.	2
Thursday....	806	.....	9	IX	D.	3
Friday.....	807	.....	10	XX	C.	4
Saturday....	808	Sunday.....	11	I	B. A.	5
Monday.....	809	.....	12	XII	G.	6
Tuesday....	810	.....	13	XXIII	F.	7
Wednesday..	811	.....	14	IV	E.	8
Thursday....	812	Friday.....	15	XV	D. C.	9
Saturday....	813	.....	16	XXVI	B.	10
Sunday.....	814	.....	17	VII	A.	11
Monday.....	815	.....	18	XVIII	G.	12
Tuesday....	816	Wednesday..	19	XXIX	F. E.	13
Thursday....	817	.....	1	XI	D.	14
Friday.....	818	.....	2	XXII	C.	15
Saturday....	819	.....	3	III	B.	16
Sunday.....	820	Monday....	4	XIV	A. G.	17
Tuesday....	821	.....	5	XXV	F.	18
Wednesday..	822	.....	6	VI	E.	19
Thursday....	823	.....	7	XVII	D.	20
Friday.....	824	Saturday....	8	XXVIII	C. B.	21
Sunday.....	825	.....	9	IX	A.	22
Monday.....	826	.....	10	XX	G.	23
Tuesday....	827	.....	11	I	F.	24
Wednesday..	828	Thursday....	12	XII	E. D.	25
Friday.....	829	.....	13	XXIII	C.	26
Saturday....	830	.....	14	IV	B.	27
Sunday.....	831	.....	15	XV	A.	28
Monday.....	832	Tuesday....	16	XXVI	G. F.	1
Wednesday..	833	.....	17	VII	E.	2
Thursday....	834	.....	18	XVIII	D.	3
Friday.....	835	.....	19	XXIX	C.	4
Saturday....	836	Sunday....	1	XI	B. A.	5
Monday.....	837	.....	2	XXII	G.	6
Tuesday....	838	.....	3	III	F.	7
Wednesday..	839	.....	4	XIV	E.	8
Thursday....	840	Friday.....	5	XXV	D. C.	9
Saturday....	841	.....	6	VI	B.	10
Sunday.....	842	.....	7	XVII	A.	11

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Monday	843	.....	8	XXVIII	G.	12
Tuesday	844	Wednesday..	9	IX	F. E.	13
Thursday	845	.....	10	XX	D.	14
Friday.....	846	.....	11	I	C.	15
Saturday....	847	.....	12	XII	B.	16
Sunday.....	848	Monday	13	XXIII	A. G.	17
Tuesday	849	.....	14	IV	F.	18
Wednesday..	850	.....	15	XV	E.	19
Thursday....	851	.....	16	XXVI	D.	20
Friday.....	852	Saturday....	17	VII	C. B.	21
Sunday.....	853	.....	18	XVIII	A.	22
Monday	854	.....	19	XXIX	G.	23
Tuesday	855	.....	1	XI	F.	24
Wednesday..	856	Thursday....	2	XXII	E. D.	25
Friday.....	857	.....	3	III	C.	26
Saturday....	858	.....	4	XIV	B.	27
Sunday.....	859	.....	5	XXV	A.	28
Monday	860	Tuesday	6	VI	G. F.	1
Wednesday..	861	.....	7	XVII	E.	2
Thursday....	862	.....	8	XXVIII	D.	3
Friday.....	863	.....	9	IX	C.	4
Saturday....	864	Sunday.....	10	XX	B. A.	5
Monday	865	.....	11	I	G.	6
Tuesday	866	.....	12	XII	F.	7
Wednesday..	867	.....	13	XXIII	E.	8
Thursday....	868	Friday.....	14	IV	D. C.	9
Saturday....	869	.....	15	XV	B.	10
Sunday.....	870	.....	16	XXVI	A.	11
Monday	871	.....	17	VII	G.	12
Tuesday	872	Wednesday..	18	XVIII	F. E.	13
Thursday....	873	.....	19	XXIX	D.	14
Friday....	874	.....	1	XI	C.	15
Saturday....	875	.....	2	XXII	B.	16
Sunday.....	876	Monday	3	III	A. G.	17
Tuesday....	877	.....	4	XIV	F.	18
Wednesday..	878	.....	5	XXV	E.	19
Thursday....	879	.....	6	VI	D.	20
Friday.....	880	Saturday....	7	XVII	C. B.	21
Sunday.....	881	.....	8	XXVIII	A.	22
Monday	882	.....	9	IX	G.	23
Tuesday	883	.....	10	XX	F.	24
Wednesday..	884	Thursday....	11	I	E. D.	25
Friday.....	885	.....	12	XII	C.	26
Saturday....	886	.....	13	XXIII	B.	27
Sunday.....	887	.....	14	IV	A.	28
Monday	888	Tuesday	15	XV	G. F.	1
Wednesday..	889	.....	16	XXVI	E.	2

Tables—(Continued).

BEGINS.	B. C.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Thursday...	890	.....	17	VII	D.	8
Friday.....	891	.....	18	XVIII	C.	4
Saturday....	892	Sunday.....	19	XXIX	B. A.	5
Monday.....	893	.....	1	XI	G.	6
Tuesday.....	894	.....	2	XXII	F.	7
Wednesday..	895	.....	3	III	E.	8
Thursday....	896	Friday.....	4	XIV	D. C.	9
Saturday....	897	.....	5	XXV	B.	10
Sunday.....	898	.....	6	VI	A.	11
Monday.....	899	.....	7	XVII	G.	12
Tuesday.....	900	Wednesday..	8	XXVIII	F. E.	13
Thursday....	901	.....	9	IX	D.	14
Friday.....	902	.....	10	XX	C.	15
Saturday....	903	.....	11	I	B.	16
Sunday.....	904	Monday.....	12	XII	A. G.	17
Tuesday.....	905	.....	13	XXIII	F.	18
Wednesday..	906	.....	14	IV	E.	19
Thursday....	907	.....	15	XV	D.	20
Friday.....	908	Saturday....	16	XXVI	C. B.	21
Sunday.....	909	.....	17	VII	A.	22
Monday.....	910	.....	18	XVIII	G.	23
Tuesday.....	911	.....	19	XXIX	F.	24
Wednesday..	912	Thursday....	1	XI	E. D.	25
Friday.....	913	.....	2	XXII	C.	26
Saturday....	914	.....	3	III	B.	27
Sunday.....	915	.....	4	XIV	A.	28
Monday.....	916	Tuesday....	5	XXV	G. F.	1
Wednesday..	917	.....	6	VI	E.	2
Thursday....	918	.....	7	XVII	D.	3
Friday.....	919	.....	8	XXVIII	C.	4
Saturday....	920	Sunday.....	9	IX	B. A.	5
Monday.....	921	.....	10	XX	G.	6
Tuesday.....	922	.....	11	I	F.	7
Wednesday..	923	.....	12	XII	E.	8
Thursday....	924	Friday....	13	XXIII	D. C.	9
Saturday....	925	.....	14	IV	B.	10
Sunday.....	926	.....	15	XV	A.	11
Monday.....	927	.....	16	XXVI	G.	12
Tuesday....	928	Wednesday..	17	VII	F. E.	13
Thursday....	929	.....	18	XVIII	D.	14
Friday.....	930	.....	19	XXIX	C.	15
Saturday....	931	.....	1	XI	B.	16
Sunday.....	932	Monday.....	2	XXII	A. G.	17
Tuesday....	933	.....	3	III	F.	18
Wednesday..	934	.....	4	XIV	E.	19
Thursday....	935	.....	5	XXV	D.	20
Friday.....	936	Saturday....	6	VI	C. B.	21

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Sunday.....	937	.....	7	XVII	A.	22
Monday.....	938	.....	8	XXVIII	G.	23
Tuesday.....	939	.....	9	IX	F.	24
Wednesday..	940	Thursday...	10	XX	E. D.	25
Friday.....	941	.....	11	I	C.	26
Saturday....	942	.....	12	XII	B.	27
Sunday.....	943	.....	13	XXIII	A.	28
Monday ..	944	Tuesday....	14	IV	G. F.	1
Wednesday..	945	.....	15	XV	E.	2
Thursday....	946	.....	16	XXVI	D.	3
Friday.....	947	.....	17	VII	C.	4
Saturday....	948	Sunday.....	18	XVIII	B. A.	5
Monday.....	949	.....	19	XXIX	G.	6
Tuesday....	950	.....	1	XI	F.	7
Wednesday..	951	.....	2	XXII	E.	8
Thursday....	952	Friday.....	3	II	D. C.	9
Saturday....	953	.....	4	XIV	B.	10
Sunday.....	954	.....	5	XXV	A.	11
Monday.....	955	.....	6	VI	G.	12
Tuesday....	956	Wednesday..	7	XVII	F. E.	13
Thursday....	957	.....	8	XXVIII	D.	14
Friday.....	958	.....	9	IX	C.	15
Saturday....	959	.....	10	XX	B.	16
Sunday.....	960	Monday....	11	I	A. G.	17
Tuesday....	961	.....	12	XII	F.	18
Wednesday..	962	.....	13	XXIII	E.	19
Thursday....	963	.....	14	IV	D.	20
Friday.....	964	Saturday....	15	XV	C. B.	21
Sunday.....	965	.....	16	XXVI	A.	22
Monday ..	966	.....	17	VII	G.	23
Tuesday....	967	.....	18	XVIII	F.	24
Wednesday .	968	Thursday...	19	XXIX	E. D.	25
Friday.. ...	969	.....	1	XI	C.	26
Saturday....	970	.....	2	XXII	B.	27
Sunday.....	971	.....	3	III	A.	28
Monday.....	972	Tuesday....	4	XIV	G. F.	1
Wednesday..	973	.....	5	XXV	E.	2
Thursday....	974	.....	6	VI	D.	3
Friday.....	975	.....	7	XVII	C.	4
Saturday....	976	Sunday.....	8	XXVIII	B. A.	5
Monday.....	977	.....	9	IX	G.	6
Tuesday....	978	.....	10	XX	F.	7
Wednesday .	979	.....	11	I	E.	8
Thursday....	980	Friday.....	12	XII	D. C.	9
Saturday....	981	.....	13	XXIII	B.	10
Sunday.....	982	.....	14	IV	A.	11
Monday.....	983	.....	15	XV	G.	12

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Tuesday	984	Wednesday .	16	XXVI	F. E.	13
Thursday ...	985	.....	17	VII	D.	14
Friday.	986	.....	18	XVIII	C.	15
Saturday....	987	.....	19	XXIX	B.	16
Sunday.....	988	Monday	1	XI	A. G.	17
Tuesday	989	.....	2	XXII	F.	18
Wednesday .	990	.....	3	III	E.	19
Thursday ...	991	.....	4	XIV	D.	20
Friday.....	992	Saturday....	5	XXV	C. B.	21
Sunday.	993	.....	6	VI	A.	22
Monday.....	994	.....	7	XVII	G.	23
Tuesday	995	.....	8	XXVIII	F.	24
Wednesday .	996	Thursday...	9	IX	E. D.	25
Friday.....	997	.....	10	XX	C.	26
Saturday....	998	.....	11	I	B.	27
Sunday.....	999	.....	12	XII	A.	28
Monday.....	1000	Tuesday	13	XXIII	G. F.	1
Wednesday .	1001	.....	14	IV	E.	2
Thursday ...	1002	.....	15	XV	D.	3
Friday.....	1003	.....	16	XXVI	C.	4
Saturday....	1004	Sunday.....	17	VII	B. A.	5
Monday.....	1005	.....	18	XVIII	G.	6
Tuesday	1006	.....	19	XXIX	F.	7
Wednesday .	1007	.....	1	XI	E.	8
Thursday ...	1008	Friday.....	2	XXII	D. C.	9
Saturday....	1009	.....	3	III	B.	10
Sunday.....	1010	.....	4	XIV	A.	11
Monday.....	1011	.....	5	XXV	G.	12
Tuesday	1012	Wednesday .	6	VI	F. E.	13
Thursday ...	1013	.....	7	XVII	D.	14
Friday.....	1014	.....	8	XXVIII	C.	15
Saturday ...	1015	.....	9	IX	B.	16
Sunday.....	1016	Monday	10	XX	A. G.	17
Tuesday	1017	.....	11	I	F.	18
Wednesday .	1018	.....	12	XII	E.	19
Thursday ...	1019	.....	13	XXIII	D.	20
Friday.....	1020	Saturday....	14	IV	C. B.	21
Sunday.....	1021	.....	15	XV	A.	22
Monday.....	1022	.....	16	XXVI	G.	23
Tuesday	1023	.....	17	VII	F.	24
Wednesday .	1024	Thursday...	18	XVIII	E. D.	25
Friday.....	1025	.....	19	XXIX	C.	26
Saturday....	1026	.....	1	XI	B.	27
Sunday.....	1027	.....	2	XXII	A.	28
Monday.....	1028	Tuesday	3	III	G. F.	1
Wednesday .	1029	.....	4	XIV	E.	2
Thursday...	1030	.....	5	XXV	D.	3

Tables — (Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Friday.....	1031	.....	6	VI	C.	4
Saturday....	1032	Sunday.....	7	XVII	B. A.	5
Monday.....	1033	.....	8	XXVIII	G.	6
Tuesday....	1034	.....	9	IX	F.	7
Wednesday..	1035	.....	10	XX	E.	8
Thursday....	1036	Friday.....	11	I	D. C.	9
Saturday....	1037	.....	12	XII	B.	10
Sunday.....	1038	.....	13	XXIII	A.	11
Monday.....	1039	.....	14	IV	G.	12
Tuesday....	1040	Wednesday..	15	XV	F. E.	13
Thursday....	1041	.....	16	XXVI	D.	14
Friday.....	1042	.....	17	VII	C.	15
Saturday....	1043	.....	18	XVIII	B.	16
Sunday.....	1044	Monday....	19	XXIX	A. G.	17
Tuesday....	1045	.....	1	XI	F.	18
Wednesday..	1046	.....	2	XXII	E.	19
Thursday....	1047	.....	3	III	D.	20
Friday.....	1048	Saturday....	4	XIV	C. B.	21
Sunday.....	1049	.....	5	XXV	A.	22
Monday.....	1050	.....	6	VI	G.	23
Tuesday....	1051	.....	7	XVII	F.	24
Wednesday..	1052	Thursday....	8	XXVIII	E. D.	25
Friday.....	1053	.....	9	IX	C.	26
Saturday....	1054	.....	10	XX	B.	27
Sunday.....	1055	.....	11	I	A.	28
Monday.....	1056	Tuesday....	12	XII	G. F.	1
Wednesday..	1057	.....	13	XXIII	E.	2
Thursday....	1058	.....	14	IV	D.	3
Friday.....	1059	.....	15	XV	C.	4
Saturday....	1060	Sunday....	16	XXVI	B. A.	5
Monday.....	1061	.....	17	VII	G.	6
Tuesday....	1062	.....	18	XVIII	F.	7
Wednesday..	1063	.....	19	XXIX	E.	8
Thursday....	1064	Friday.....	1	XI	D. C.	9
Saturday....	1065	.....	2	XXII	B.	10
Sunday.....	1066	.....	3	III	A.	11
Monday.....	1067	.....	4	XIV	G.	12
Tuesday....	1068	Wednesday..	5	XXV	F. E.	13
Thursday....	1069	.....	6	VI	D.	14
Friday.....	1070	.....	7	XVII	C.	15
Saturday....	1071	.....	8	XXVIII	B.	16
Sunday.....	1072	Monday.....	9	IX	A. G.	17
Tuesday....	1073	.....	10	XX	F.	18
Wednesday..	1074	.....	11	I	E.	19
Thursday....	1075	.....	12	XII	D.	20
Friday.....	1076	Saturday....	13	XXIII	C. B.	21
Sunday.....	1077	.....	14	IV	A.	22

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Monday	1078	.....	15	XV	G.	23
Tuesday	1079	.....	16	XXVI	F.	24
Wednesday .	1080	Thursday...	17	VII	E. D.	25
Friday.....	1081	.....	18	XVIII	C.	26
Saturday ...	1082	.....	19	XXIX	B.	27
Sunday.....	1083	.....	1	XI	A.	28
Monday	1084	Tuesday....	2	XXII	G. F.	1
Wednesday .	1085	.....	3	III	E.	2
Thursday...	1086	.....	4	XIV	D.	3
Friday.....	1087	.....	5	XXV	C.	4
Saturday ...	1088	Sunday.....	6	VI	B. A.	5
Monday	1089	.....	7	XVII	G.	6
Tuesday	1090	.....	8	XXVIII	F.	7
Wednesday .	1091	.....	9	IX	E.	8
Thursday...	1092	Friday.....	10	XX	D. C.	9
Saturday....	1093	.....	11	I	B.	10
Sunday.....	1094	.....	12	XII	A.	11
Monday	1095	.....	13	XXIII	G.	12
Tuesday	1096	Wednesday .	14	IV	F. E.	13
Thursday...	1097	.....	15	XV	D.	14
Friday.....	1098	.....	16	XXVI	C.	15
Saturday....	1099	.....	17	VII	B.	16
Sunday.....	1100	Monday	18	XVIII	A. G.	17
Tuesday	1101	.....	19	XXIX	F.	18
Wednesday .	1102	.....	1	XI	E.	19
Thursday...	1103	.....	2	XXII	D.	20
Friday.....	1104	Saturday....	3	III	C. B.	21
Sunday.....	1105	.....	4	XIV	A.	22
Monday	1106	.....	5	XXV	G.	23
Tuesday	1107	.....	6	VI	F.	24
Wednesday .	1108	Thursday...	7	XVII	E. D.	25
Friday.....	1109	.....	8	XXVIII	C.	26
Saturday....	1110	.....	9	IX	B.	27
Sunday.....	1111	.....	10	XX	A.	28
Monday	1112	Tuesday....	11	I	G. F.	1
Wednesday .	1113	.....	12	XII	E.	2
Thursday...	1114	.....	13	XXIII	D.	3
Friday.....	1115	.....	14	IV	C.	4
Saturday....	1116	Sunday.....	15	XV	B. A.	5
Monday	1117	.....	16	XXVI	G.	6
Tuesday	1118	.....	17	VII	F.	7
Wednesday .	1119	.....	18	XVIII	E.	8
Thursday...	1120	Friday.....	19	XXIX	D. C.	9
Saturday....	1121	.....	1	XI	B.	10
Sunday.....	1122	.....	2	XXII	A.	11
Monday	1123	.....	3	III	G.	12
Tuesday	1124	Wednesday .	4	XIV	F. E.	13

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C:
Thursday...	1125	.....	5	XXV	D.	14
Friday.....	1126	.....	6	VI	C.	15
Saturday....	1127	.....	7	XVII	B.	16
Sunday.....	1128	Monday....	8	XXVIII	A. G.	17
Tuesday....	1129	.....	9	IX	F.	18
Wednesday..	1130	.....	10	XX	E.	19
Thursday...	1131	.....	11	I	D.	20
Friday.....	1132	Saturday...	12	XII	C. B.	21
Sunday.....	1133	.....	13	XXIII	A.	22
Monday....	1134	.....	14	IV	G.	23
Tuesday....	1135	.....	15	XV	F.	24
Wednesday..	1136	Thursday...	16	XXVI	E. D.	25
Friday.....	1137	.....	17	VII	C.	26
Saturday....	1138	.....	18	XVIII	B.	27
Sunday.....	1139	.....	19	XXIX	A.	28
Monday....	1140	Tuesday....	1	XI	G. F.	1
Wednesday..	1141	.....	2	XXII	E.	2
Thursday...	1142	.....	3	III	D.	3
Friday.....	1143	.....	4	XIV	C.	4
Saturday....	1144	Sunday....	5	XXV	B. A.	5
Monday....	1145	.....	6	VI	G.	6
Tuesday....	1146	.....	7	XVII	F.	7
Wednesday..	1147	.....	8	XXVIII	E.	8
Thursday...	1148	Friday.....	9	IX	D. C.	9
Saturday....	1149	.....	10	XX	B.	10
Sunday.....	1150	.....	11	I	A.	11
Monday....	1151	.....	12	XII	G.	12
Tuesday...	1152	Wednesday..	13	XXIII	F. E.	13
Thursday...	1153	.....	14	IV	D.	14
Friday.....	1154	.....	15	XV	C.	15
Saturday....	1155	.....	16	XXVI	B.	16
Sunday.....	1156	Monday....	17	VII	A. G.	17
Tuesday....	1157	.....	18	XVII	F.	18
Wednesday..	1158	.....	19	XXIX	E.	19
Thursday...	1159	.....	1	XI	D.	20
Friday.....	1160	Saturday....	2	XXII	C. B.	21
Sunday.....	1161	.....	3	III	A.	22
Monday....	1162	.....	4	XIV	G.	23
Tuesday....	1163	.....	5	XXV	F.	24
Wednesday..	1164	Thursday...	6	VI	E. D.	25
Friday.....	1165	.....	7	XVII	C.	26
Saturday....	1166	.....	8	XXVIII	B.	27
Sunday.....	1167	.....	9	IX	A.	28
Monday....	1168	Tuesday....	10	XX	G. F.	1
Wednesday..	1169	.....	11	I	E.	2
Thursday...	1170	.....	12	XII	D.	3
Friday.....	1171	.....	13	XXIII	C.	4

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Saturday....	1172	Sunday.....	14	IV	B. A.	5
Monday	1173	.....	15	XV	G.	6
Tuesday ...	1174	.....	16	XXVI	F.	7
Wednesday .	1175	.....	17	VII	E.	8
Thursday... 1176		Friday.....	18	XXVIII	D. C.	9
Saturday.... 1177		.....	19	XXIX	B.	10
Sunday 1178		.....	1	XI	A.	11
Monday 1179		.....	2	XXII	G.	12
Tuesday 1180		Wednesday .	3	III	F. E.	13
Thursday... 1181		.....	4	XIV	D.	14
Friday..... 1182		.....	5	XXV	C.	15
Saturday.... 1183		.....	6	VI	B.	16
Sunday 1184		Monday	7	XVII	A. G.	17
Tuesday 1185		.....	8	XXVIII	F.	18
Wednesday . 1186		.....	9	IX	E.	19
Thursday... 1187		.....	10	XX	D.	20
Friday..... 1188		Saturday....	11	I	C. B.	21
Sunday 1189		.....	12	XII	A.	22
Monday 1190		.....	13	XXIII	G.	23
Tuesday 1191		.....	14	IV	F.	24
Wednesday . 1192		Thursday... 1193	15	XV	E. D.	25
Friday..... 1193		.....	16	XXVI	C.	26
Saturday.... 1194		.....	17	VII	B.	27
Sunday 1195		.....	18	XXVIII	A.	28
Monday 1196		Tuesday	19	XXIX	G. F.	1
Wednesday . 1197		.....	1	XI	E.	2
Thursday... 1198		.....	2	XXII	D.	3
Friday.... 1199		.....	3	III	C.	4
Saturday.... 1200		Sunday	4	XIV	B. A.	5
Monday 1201		.....	5	XXV	G.	6
Tuesday 1202		.....	6	VI	F.	7
Wednesday . 1203		.....	7	XVII	E.	8
Thursday... 1204		Friday.....	8	XXVIII	D. C.	9
Saturday.... 1205		.....	9	IX	B.	10
Sunday 1206		.....	10	XX	A.	11
Monday 1207		.....	11	I	G.	12
Tuesday 1208		Wednesday .	12	XII	F. E.	13
Thursday... 1209		.....	13	XXIII	D.	14
Friday..... 1210		.....	14	IV	C.	15
Saturday.... 1211		.....	15	XV	B.	16
Sunday 1212		Monday	16	XXVI	A. G.	17
Tuesday 1213		.....	17	VII	F.	18
Wednesday . 1214		.....	18	XXVIII	E.	19
Thursday... 1215		.....	19	XXIX	D.	20
Friday.... 1216		Saturday ...	1	XI	C. B.	21
Sunday 1217		.....	-2	XXII	A.	22
Monday 1218		.....	3	III	G.	23

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Tuesday	1219	.....	4	XIV	F	24
Wednesday .	1220	Thursday...	5	XXV	E. D.	25
Friday.....	1221	.....	6	VI	C.	26
Saturday....	1222	.....	7	XVII	B.	27
Sunday.....	1223	.....	8	XXVIII	A.	28
Monday.....	1224	Tuesday....	9	IX	G. F.	1
Wednesday .	1225	.....	10	XX	E.	2
Thursday...	1226	.....	11	I	D.	3
Friday... ..	1227	.....	12	XII	C.	4
Saturday....	1228	Sunday.....	13	XXIII	B. A.	5
Monday	1229	.....	14	IV	G.	6
Tuesday	1230	.....	15	XV	F.	7
Wednesday .	1231	.....	16	XXVI	E.	8
Thursday...	1232	Friday.....	17	VII	D. C.	9
Saturday....	1233	.....	18	XVIII	B.	10
Sunday.....	1234	.....	19	XXIX	A.	11
Monday	1235	.....	1	XI	G.	12
Tuesday....	1236	Wednesday .	2	XXII	F. E.	13
Thursday....	1237	.....	3	III	D.	14
Friday.....	1238	.....	4	XIV	C.	15
Saturday....	1239	.....	5	XXV	B.	16
Sunday.....	1240	Monday	6	VI	A. G.	17
Tuesday	1241	.....	7	XVII	F.	18
Wednesday .	1242	.....	8	XXVIII	E.	19
Thursday...	1243	.....	9	IX	D.	20
Friday... ..	1244	Saturday ...	10	XX	C. B.	21
Sunday.....	1245	.....	11	I	A. *	22
Monday	1246	.....	12	XII	G.	23
Tuesday	1247	.....	13	XXIII	F.	24
Wednesday .	1248	Thursday...	14	IV	E. D.	25
Friday.....	1249	.....	15	XV	C.	26
Saturday....	1250	.....	16	XXVI	B.	27
Sunday.....	1251	.....	17	VII	A.	28
Monday	1252	Tuesday....	18	XVIII	G. F.	1
Wednesday .	1253	.....	19	XXIX	E.	2
Thursday...	1254	.....	1	XI	D.	3
Friday.....	1255	.....	2	XXII	C.	4
Saturday....	1256	Sunday.....	3	III	B. A.	5
Monday	1257	.....	4	XIV	G.	6
Tuesday	1258	.....	5	XXV	F.	7
Wednesday .	1259	.....	6	VI	E.	8
Thursday...	1260	Friday.....	7	XVII	D. C.	9
Saturday....	1261	.....	8	XXVIII	B.	10
Sunday.....	1262	.....	9	IX	A.	11
Monday	1263	.....	10	XX	G.	12
Tuesday	1264	Wednesday .	11	I	F. E.	13
Thursday...	1265	.....	12	XII	D.	14

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Friday.....	1266	.....	13	XXIII	C.	15
Saturday....	1267	.....	14	IV	B.	16
Sunday.....	1268	Monday....	15	XV	A. G.	17
Tuesday....	1269	.....	16	XXVI	F.	18
Wednesday..	1270	.....	17	VII	E.	19
Thursday...	1271	.....	18	XVIII	D.	20
Friday.....	1272	Saturday....	19	XXIX	C. B.	21
Sunday.....	1273	.....	1	XI	A.	22
Monday.....	1274	.....	2	XXII	G.	23
Tuesday....	1275	.....	3	III	F.	24
Wednesday..	1276	Thursday...	4	XIV	E. D.	25
Friday.....	1277	.....	5	XXV	C.	26
Saturday....	1278	.....	6	VI	B.	27
Sunday.....	1279	.....	7	XVII	A.	28
Monday.....	1280	Tuesday....	8	XXVIII	G. F.	1
Wednesday..	1281	.....	9	IX	E.	2
Thursday....	1282	.....	10	XX	D.	3
Friday.....	1283	.....	11	I	C.	4
Saturday....	1284	Sunday.....	12	XII	B. A.	5
Monday.....	1285	.....	13	XXIII	G.	6
Tuesday....	1286	.....	14	IV	F.	7
Wednesday..	1287	.....	15	XV	E.	8
Thursday....	1288	Friday.....	16	XXVI	D. C.	9
Saturday....	1289	.....	17	VII	B.	10
Sunday.....	1290	.....	18	XVIII	A.	11
Monday....	1291	.....	19	XXIX	G.	12
Tuesday....	1292	Wednesday..	1	XI	F. E.	13
Thursday....	1293	.....	2	XXII	D.	14
Friday.....	1294	.....	3	III	C.	15
Saturday....	1295	.....	4	XIV	B.	16
Sunday.....	1296	Monday....	5	XXV	A. G.	17
Tuesday....	1297	.....	6	VI	F.	18
Wednesday..	1298	.....	7	XVII	E.	19
Thursday....	1299	.....	8	XXVIII	D.	20
Friday.....	1300	Saturday...	9	IX	C. B.	21
Sunday.....	1301	.....	10	XX	A.	22
Monday.....	1302	.....	11	I	G.	23
Tuesday....	1303	.....	12	XII	F.	24
Wednesday..	1304	Thursday...	13	XXIII	E. D.	25
Friday.....	1305	.....	14	IV	C.	26
Saturday....	1306	.....	15	XV	B.	27
Sunday.....	1307	.....	16	XXVI	A.	28
Monday.....	1308	Tuesday....	17	VII	G. F.	1
Wednesday..	1309	.....	18	XVIII	E.	2
Thursday....	1310	.....	19	XXIX	D.	3
Friday.....	1311	.....	1	XI	C.	4
Saturday....	1312	Sunday....	2	XXII	B. A.	5

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Monday	1313	.....	3	III	G.	6
Tuesday	1314	.....	4	XIV	F.	7
Wednesday ...	1315	.....	5	XXV	E.	8
Thursday ...	1316	Friday.....	6	VI	D. C.	9
Saturday....	1317	.....	7	XVII	B.	10
Sunday.....	1318	.....	8	XXVIII	A.	11
Monday	1319	.....	9	IX	G.	12
Tuesday	1320	Wednesday..	10	XX	F. E.	13
Thursday ...	1321	.....	11	I	D.	14
Friday.....	1322	.....	12	XII	C.	15
Saturday ...	1323	.....	13	XXIII	B.	16
Sunday.....	1324	Monday ...	14	IV	A. G.	17
Tuesday	1325	.....	15	XV	F.	18
Wednesday..	1326	.....	16	XXVI	E.	19
Thursday ...	1327	.....	17	VII	D.	20
Friday.....	1328	Saturday ...	18	XVIII	C. B.	21
Sunday.....	1329	.....	19	XXIX	A.	22
Monday	1330	.....	1	XI	G.	23
Tuesday	1331	.....	2	XXII	F.	24
Wednesday ...	1332	Thursday...	3	III	E. D.	25
Friday.....	1333	.....	4	XIV	C.	26
Saturday....	1334	.....	5	XXV	B.	27
Sunday.....	1335	.....	6	VI	A.	28
Monday	1336	Tuesday	7	XVII	G. F.	1
Wednesday .	1337	.....	8	XXVIII	E.	2
Thursday ...	1338	.....	9	IX	D.	3
Friday.....	1339	.....	10	XX	C.	4
Saturday....	1340	Sunday.....	11	I	B. A.	5
Monday	1341	.....	12	XII	G.	6
Tuesday	1342	.....	13	XXIII	F.	7
Wednesday .	1343	.....	14	IV	E.	8
Thursday ...	1344	Friday.....	15	XV	D. C.	9
Saturday ...	1345	.....	16	XXVI	B.	10
Sunday.....	1346	.....	17	VII	A.	11
Monday ..	1347	.....	18	XVIII	G.	12
Tuesday	1348	Wednesday .	19	XXIX	F. E.	13
Thursday ...	1349	.....	1	XI	D.	14
Friday.....	1350	.....	2	XXII	C.	15
Saturday....	1351	.....	3	III	B.	16
Sunday.....	1352	Monday	4	XIV	A. G.	17
Tuesday	1353	.....	5	XXV	F.	18
Wednesday .	1354	.....	6	VI	E.	19
Thursday ...	1355	.....	7	XVII	D.	20
Friday.....	1356	Saturday....	8	XXVIII	C. B.	21
Sunday.....	1357	.....	9	IX	A.	22
Monday	1358	.....	10	XX	G.	23
Tuesday	1359	.....	11	I	F.	24

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Wednesday .	1360	Thursday...	12	XII	E. D.	25
Friday.....	1361	.....	13	XXIII	C.	26
Saturday....	1362	.....	14	IV	B.	27
Sunday.....	1363	.....	15	XV	A.	28
Monday	1364	Tuesday....	16	XXVI	G. F.	1
Wednesday..	1365	.....	17	VII	E.	2
Thursday....	1366	.....	18	XVIII	D.	3
Friday.....	1367	.....	19	XXIX	C.	4
Saturday....	1368	Sunday.....	1	XI	B. A.	5
Monday	1369	.....	2	XXII	G.	6
Tuesday....	1370	.....	3	III	F.	7
Wednesday..	1371	.....	4	XIV	E.	8
Thursday....	1372	Friday.....	5	XXV	D. C.	9
Saturday....	1373	.....	6	VI	B.	10
Sunday.....	1374	.....	7	XVII	A.	11
Monday	1375	.....	8	XXVIII	G.	12
Tuesday....	1376	Wednesday..	9	IX	F. E.	13
Thursday....	1377	.....	10	XX	D.	14
Friday.....	1378	.....	11	I	C.	15
Saturday....	1379	.....	12	XII	B.	16
Sunday.....	1380	Monday	13	XXIII	A. G.	17
Tuesday....	1381	.....	14	IV	F.	18
Wednesday..	1382	.....	15	XV	E.	19
Thursday....	1383	.....	16	XXVI	D.	20
Friday.....	1384	Saturday....	17	VII	C. B.	21
Sunday.....	1385	.....	18	XVIII	A.	22
Monday	1386	.....	19	XXIX	G.	23
Tuesday....	1387	.....	1	XI	F.	24
Wednesday..	1388	Thursday....	2	XXII	E. D.	25
Friday.....	1389	.....	3	III	C.	26
Saturday....	1390	.....	4	XIV	B.	27
Sunday.....	1391	.....	5	XXV	A.	28
Monday	1392	Tuesday....	6	VI	G. F.	1
Wednesday..	1393	.....	7	XVII	E.	2
Thursday....	1394	.....	8	XXVIII	D.	3
Friday.....	1395	.....	9	IX	C.	4
Saturday....	1396	Sunday.....	10	XX	B. A.	5
Monday	1397	.....	11	I	G.	6
Tuesday....	1398	.....	12	XII	F.	7
Wednesday..	1399	.....	13	XXIII	E.	8
Thursday....	1400	Friday.....	14	IV	D. C.	9
Saturday....	1401	.....	15	XV	B.	10
Sunday.....	1402	.....	16	XXVI	A.	11
Monday	1403	.....	17	VII	G.	12
Tuesday....	1404	Wednesday..	18	XVIII	F. E.	13
Thursday....	1405	.....	19	XXIX	D.	14
Friday.....	1406	.....	1	XI	C.	15

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Saturday ...	1407	.....	2	XXII	B.	16
Sunday	1408	Monday	3	III	A. G.	17
Tuesday	1409	.....	4	XIV	F.	18
Wednesday .	1410	.....	5	XXV	E.	19
Thursday ...	1411	.....	6	VI	D.	20
Friday	1412	Saturday ...	7	XVII	C. B.	21
Sunday	1413	.....	8	XXVIII	A.	22
Monday	1414	.....	9	IX	G.	23
Tuesday	1415	.....	10	XX	F.	24
Wednesday..	1416	Thursday ...	11	I	E. D.	25
Friday	1417	.....	12	XII	C.	26
Saturday	1418	.....	13	XXIII	B.	27
Sunday	1419	.....	14	IV	A.	28
Monday	1420	Tuesday	15	XV	G. F.	1
Wednesday..	1421	.....	16	XXVI	E.	2
Thursday ...	1422	.....	17	VII	D.	3
Friday	1423	.....	18	XVIII	C.	4
Saturday	1424	Sunday	19	XXIX	B. A.	5
Monday	1425	.....	1	XI	G.	6
Tuesday	1426	.....	2	XXII	F.	7
Wednesday..	1427	.....	3	III	E.	8
Thursday ...	1428	Friday	4	XIV	D. C.	9
Saturday	1429	.....	5	XXV	B.	10
Sunday	1430	.....	6	VI	A.	11
Monday	1431	.....	7	XVII	G.	12
Tuesday	1432	Wednesday .	8	XXVIII	F. E.	13
Thursday ...	1433	.....	9	IX	D.	14
Friday	1434	.....	10	XX	C.	15
Saturday	1435	.....	11	I	B.	16
Sunday	1436	Monday	12	XII	A. G.	17
Tuesday	1437	.....	13	XXIII	F.	18
Wednesday..	1438	.....	14	IV	E.	19
Thursday ...	1439	.....	15	XV	D.	20
Friday	1440	Saturday ...	16	XXVI	C. B.	21
Sunday	1441	.....	17	VII	A.	22
Monday	1442	.....	18	XVIII	G.	23
Tuesday	1443	.....	19	XXIX	F.	24
Wednesday..	1444	Thursday ...	1	XI	E. D.	25
Friday	1445	.....	2	XXII	C.	26
Saturday ...	1446	.....	3	III	B.	27
Sunday	1447	.....	4	XIV	A.	28
Monday	1448	Tuesday	5	XXV	G. F.	1
Wednesday .	1449	.....	6	VI	E.	2
Thursday ...	1450	.....	7	XVII	D.	3
Friday	1451	.....	8	XXVIII	C.	4
Saturday	1452	Sunday	9	IX	B. A.	5
Monday ...	1453	.....	10	XX	G.	6

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Tuesday....	1454	.....	11	I	F.	7
Wednesday..	1455	.....	12	XII	E.	8
Thursday...	1456	Friday.....	13	XXIII	D. C.	9
Saturday....	1457	.....	14	IV	B.	10
Sunday.....	1458	.....	15	XV	A.	11
Monday.....	1459	.....	16	XXVI	G.	12
Tuesday....	1460	Wednesday..	17	VII	F. E.	13
Thursday...	1461	.....	18	XVIII	D.	14
Friday.....	1462	.....	19	XXIX	C.	15
Saturday....	1463	.....	1	XI	B.	16
Sunday....	1464	Monday....	2	XXII	A. G.	17
Tuesday....	1465	.....	3	III	F.	18
Wednesday..	1466	.....	4	XIV	E.	19
Thursday...	1467	.....	5	XXV	D.	20
Friday.....	1468	Saturday....	6	VI	C. B.	21
Sunday....	1469	.....	7	XVII	A.	22
Monday....	1470	.....	8	XXVIII	G.	23
Tuesday....	1471	.....	9	IX	F.	24
Wednesday..	1472	Thursday...	10	XX	E. D.	25
Friday.....	1473	.....	11	I	C.	26
Saturday....	1474	.....	12	XII	B.	27
Sunday.....	1475	.....	13	XXIII	A.	28
Monday....	1476	Tuesday....	14	IV	G. F.	1
Wednesday..	1477	.....	15	XV	E.	2
Thursday...	1478	.....	16	XXVI	D.	3
Friday.....	1479	.....	17	VII	C.	4
Saturday....	1480	Sunday.....	18	XVIII	B. A.	5
Monday....	1481	.....	19	XXIX	G.	6
Tuesday....	1482	.....	1	XI	F.	7
Wednesday..	1483	.....	2	XXII	E.	8
Thursday...	1484	Friday.....	3	III	D. C.	9
Saturday....	1485	.....	4	XIV	B.	10
Sunday.....	1486	.....	5	XXV	A.	11
Monday....	1487	.....	6	VI	G.	12
Tuesday....	1488	Wednesday..	7	XVII	F. E.	13
Thursday...	1489	.....	8	XXVIII	D.	14
Friday.....	1490	.....	9	IX	C.	15
Saturday....	1491	.....	10	XX	B.	16
Sunday.....	1492	Monday....	11	I	A. G.	17
Tuesday....	1493	.....	12	XII	F.	18
Wednesday..	1494	.....	13	XXIII	E.	19
Thursday...	1495	.....	14	IV	D.	20
Friday.....	1496	Saturday....	15	XV	C. B.	21
Sunday.....	1497	.....	16	XXVI	A.	22
Monday....	1498	.....	17	VII	G.	23
Tuesday....	1499	.....	18	XVIII	F.	24
Wednesday..	1500	Thursday...	19	XXIX	E. D.	25

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Friday.....	1501	.....	1	XI	C.	26
Saturday....	1502	.....	2	XXII	B.	27
Sunday.....	1503	.....	3	III	A.	28
Monday	1504	Tuesday....	4	XIV	G. F.	1
Wednesday..	1505	.....	5	XXV	E.	2
Thursday....	1506	.....	6	VI	D.	3
Friday.....	1507	.....	7	XVII	C.	4
Saturday....	1508	Sunday.....	8	XXVIII	B. A.	5
Monday	1509	.....	9	IX	G.	6
Tuesday....	1510	.....	10	XX	F.	7
Wednesday..	1511	.....	11	I	E.	8
Thursday....	1512	Friday.....	12	XII	D. C.	9
Saturday....	1513	.....	13	XXIII	B.	10
Sunday	1514	.....	14	IV	A.	11
Monday	1515	.....	15	XV	G.	12
Tuesday....	1516	Wednesday..	16	XXVI	F. E.	13
Thursday....	1517	.....	17	VII	D.	14
Friday.....	1518	.....	18	XVIII	C.	15
Saturday....	1519	.....	19	XXIX	B.	16
Sunday.....	1520	Monday....	1	XI	A. G.	17
Tuesday....	1521	.....	2	XXII	F.	18
Wednesday..	1522	.....	3	III	E.	19
Thursday....	1523	.....	4	XIV	D.	20
Friday.....	1524	Saturday....	5	XXV	C. B.	21
Sunday.....	1525	.....	6	VI	A.	22
Monday	1526	.....	7	XVII	G.	23
Tuesday....	1527	.....	8	XXVIII	F.	24
Wednesday..	1528	Thursday....	9	IX	E. D.	25
Friday.....	1529	.....	10	XX	C.	26
Saturday....	1530	.....	11	I	B.	27
Sunday.....	1531	.....	12	XII	A.	28
Monday	1532	Tuesday....	13	XXIII	G. F.	1
Wednesday..	1533	.....	14	IV	E.	2
Thursday....	1534	.....	15	XV	D.	3
Friday.....	1535	.....	16	XXVI	C.	4
Saturday....	1536	Sunday.....	17	VII	B. A.	5
Monday	1537	.....	18	XVIII	G.	6
Tuesday....	1538	.....	19	XXIX	F.	7
Wednesday..	1539	.....	1	XI	E.	8
Thursday....	1540	Friday.....	2	XXII	D. C.	9
Saturday....	1541	.....	3	III	B.	10
Sunday.....	1542	.....	4	XIV	A.	11
Monday	1543	.....	5	XXV	G.	12
Tuesday....	1544	Wednesday..	6	VI	F. E.	13
Thursday....	1545	.....	7	XVII	D.	14
Friday.....	1546	.....	8	XXVIII	C.	15
Saturday....	1547	.....	9	IX	B.	16

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Sunday.....	1548	Monday	10	XX	A. G.	17
Tuesday	1549	.....	11	I	F.	18
Wednesday..	1550	.....	12	XII	E.	19
Thursday....	1551	.....	13	XXIII	D.	20
Friday.....	1552	Saturday ...	14	IV	C. B.	21
Sunday.....	1553	.....	15	XV	A.	22
Monday	1554	.....	16	XXVI	G.	23
Tuesday	1555	.....	17	XIV	F.	24
Wednesday..	1556	Thursday...	18	XVIII	E. D.	25
Friday.....	1557	.....	19	XXIX	C.	26
Saturday....	1558	.....	1	XI	B.	27
Sunday.....	1559	.....	2	XXII	A.	28
Monday	1560	Tuesday....	3	III	G. F.	1
Wednesday..	1561	.....	4	XIV	E.	2
Thursday....	1562	.....	5	XXV	D.	3
Friday.....	1563	.....	6	VI	C.	4
Saturday....	1564	Sunday.....	7	XVII	B. A.	5
Monday	1565	.....	8	XXVIII	G.	6
Tuesday	1566	.....	9	IX	F.	7
Wednesday..	1567	.....	10	XX	E.	8
Thursday....	1568	Friday.....	11	I	D. C.	9
Saturday....	1569	.....	12	XII	B.	10
Sunday.....	1570	.....	13	XXIII	A.	11
Monday	1571	.....	14	IV	G.	12
Tuesday	1572	Wednesday..	15	XV	F. E.	13
Thursday....	1573	.....	16	XXVI	D.	14
Friday.....	1574	.....	17	VII	C.	15
Saturday	1575	.....	18	XVIII	B.	16
Sunday.....	1576	Monday ...	19	XXIX	A. G.	17
Tuesday....	1577	.....	1	XI	F.	18
Wednesday..	1578	.....	2	XXII	E.	19
Thursday....	1579	.....	3	III	D.	20
Friday.....	1580	Saturday ...	4	XIV	C. B.	21
Sunday.....	1581	.....	5	XXV	A.	22
Monday	1582	Friday.....	6	VI	G.	23
.....	.....	.....	.....	XXVI	C.	23
Saturday ...	1583	.....	7	VII	B.	24
Sunday	1584	Monday	8	XVIII	A. G.	25
Tuesday	1585	.....	9	XXIX	F.	26
Wednesday..	1586	.....	10	X	E.	27
Thursday....	1587	.....	11	XXI	D.	28
Friday.....	1588	Saturday ...	12	II	C. B.	1
Sunday.....	1589	.....	13	XIII	A.	2
Monday	1590	.....	14	XXIV	G.	3
Tuesday	1591	.....	15	V	F.	4
Wednesday..	1592	Thursday...	16	XVI	E. D.	5
Friday.....	1593	.....	17	XXVII	C.	6

Tables—(Continued).

BEGIN.	A. D.	ENDA.	G. N.	Æpact.	D. L.	S. C.
Saturday....	1594	.....	18	VIII	B.	7
Sunday.....	1595	.....	19	XIX	A.	8
Monday.....	1596	Tuesday....	1	I	G. F.	9
Wednesday..	1597	.....	2	XII	E.	10
Thursday....	1598	.....	3	XXIII	D.	11
Friday.....	1599	.....	4	IV	C.	12
Saturday....	1600	Sunday.....	5	XV	B. A.	13
Monday.....	1601	.....	6	XXVI	G.	14
Tuesday....	1602	.....	7	VII	F.	15
Wednesday..	1603	.....	8	XVIII	E.	16
Thursday....	1604	Friday.....	9	XXIX	D. C.	17
Saturday....	1605	.....	10	X	B.	18
Sunday.....	1606	.....	11	XI	A.	19
Monday.....	1607	.....	12	II	G.	20
Tuesday....	1608	Wednesday..	13	XIII	F. E.	21
Thursday....	1609	.....	14	XXIV	D.	22
Friday.....	1610	.....	15	V	C.	23
Saturday....	1611	.....	16	XVI	B.	24
Sunday.....	1612	Monday....	17	XXVII	A. G.	25
Tuesday....	1613	.....	18	VIII	F.	26
Wednesday..	1614	.....	19	XIX	E.	27
Thursday....	1615	.....	1	I	D.	28
Friday.....	1616	Saturday....	2	XII	C. B.	1
Sunday.....	1617	.....	3	XXIII	A.	2
Monday.....	1618	.....	4	IV	G.	3
Tuesday....	1619	.....	5	XV	F.	4
Wednesday..	1620	Thursday....	6	XXVI	E. D.	5
Friday.....	1621	.....	7	VII	C.	6
Saturday....	1622	.....	8	XVIII	B.	7
Sunday.....	1623	.....	9	XXIX	A.	8
Monday.....	1624	Tuesday....	10	X	G. F.	9
Wednesday..	1625	.....	11	XI	E.	10
Thursday....	1626	.....	12	II	D.	11
Friday.....	1627	.....	13	XIII	C.	12
Saturday....	1628	Sunday.....	14	XXIV	B. A.	13
Monday.....	1629	.....	15	V	G.	14
Tuesday....	1630	.....	16	XVI	F.	15
Wednesday..	1631	.....	17	XXVII	E.	16
Thursday....	1632	Friday.....	18	VIII	D. C.	17
Saturday....	1633	.....	19	XIX	B.	18
Sunday.....	1634	.....	1	I	A.	19
Monday.....	1635	.....	2	XII	G.	20
Tuesday....	1636	Wednesday..	3	XXIII	F. E.	21
Thursday....	1637	.....	4	IV	D.	22
Friday.....	1638	.....	5	XV	C.	23
Saturday....	1639	.....	6	XXVI	B.	24
Sunday.....	1640	Monday....	7	VII	A. G.	25

Tables—(Continued).

BEGINS.	B. C.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Tuesday	1641	.....	8	XVIII	F.	26
Wednesday..	1642	.....	9	XXIX	E.	27
Thursday...	1643	.....	10	X	D.	28
Friday.....	1644	Saturday....	11	XXI	C. B.	1
Sunday.....	1645	.....	12	II	A.	2
Monday.....	1646	.....	13	XIII	G.	3
Tuesday.....	1647	.....	14	XXIV	F.	4
Wednesday..	1648	Thursday...	15	V	E. D.	5
Friday.....	1649	.....	16	XVI	C.	6
Saturday....	1650	.....	17	XXVII	B.	7
Sunday.....	1651	.....	18	VIII	A.	8
Monday.....	1652	Tuesday....	19	XIX	G. F.	9
Wednesday..	1653	.....	1	I	E.	10
Thursday...	1654	.....	2	XII	D.	11
Friday.....	1655	.....	3	XXIII	C.	12
Saturday....	1656	Sunday.....	4	IV	B. A.	13
Monday.....	1657	.....	5	XV	G.	14
Tuesday.....	1658	.....	6	XXVI	F.	15
Wednesday..	1659	.....	7	VII	E.	16
Thursday...	1660	Friday.....	8	XVIII	D. C.	17
Saturday....	1661	.....	9	XXIX	B.	18
Sunday.....	1662	.....	10	X	A.	19
Monday.....	1663	.....	11	XXI	G.	20
Tuesday.....	1664	Wednesday..	12	II	F. E.	21
Thursday...	1665	.....	13	XIII	D.	22
Friday.....	1666	.....	14	XXIV	C.	23
Saturday....	1667	.....	15	V	B.	24
Sunday.....	1668	Monday....	16	XVI	A. G.	25
Tuesday.....	1669	.....	17	XXVII	F.	26
Wednesday..	1670	.....	18	VIII	E.	27
Thursday...	1671	.....	19	XIX	D.	28
Friday.....	1672	Saturday....	1	I	C. B.	1
Sunday.....	1673	.....	2	XII	A.	2
Monday.....	1674	.....	3	XXIII	G.	3
Tuesday.....	1675	.....	4	IV	F.	4
Wednesday..	1676	Thursday...	5	XV	E. D.	5
Friday.....	1677	.....	6	XXVI	C.	6
Saturday....	1678	.....	7	VII	B.	7
Sunday.....	1679	.....	8	XVIII	A.	8
Monday.....	1680	Tuesday....	9	XXIX	G. F.	9
Wednesday..	1681	.....	10	X	E.	10
Thursday...	1682	.....	11	XXI	D.	11
Friday.....	1683	.....	12	II	C.	12
Saturday....	1684	Sunday.....	13	XIII	B. A.	13
Monday.....	1685	.....	14	XXIV	G.	14
Tuesday.....	1686	.....	15	V	F.	15
Wednesday..	1687	.....	16	XVI	E.	16

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Thursday ...	1688	Friday	17	XXVII	D. C.	17
Saturday ...	1689	.....	18	VIII	B.	18
Sunday	1690	.....	19	XIX	A.	19
Monday	1691	.....	1	I	G.	20
Tuesday...	1692	Wednesday..	2	XII	F. E.	21
Thursday...	1693	.....	3	XXIII	D.	22
Friday.	1694	.....	4	IV	C.	23
Saturday ...	1695	.....	5	XV	B.	24
Sunday	1696	Monday	6	XXVI	A. G.	25
Tuesday...	1697	.....	7	VII	F.	26
Wednesday..	1698	.....	8	XVIII	E.	27
Thursday...	1699	.....	9	XXIX	D.	28
Friday	1700	.....	10	IX	C.	1
Saturday ...	1701	.....	11	XX	B.	2
Sunday	1702	.....	12	I	A.	3
Monday	1703	.....	13	XII	G.	4
Tuesday...	1704	Wednesday..	14	XXIII	F. E.	5
Thursday...	1705	.....	15	IV	D.	6
Friday..	1706	.....	16	XV	C.	7
Saturday ...	1707	.....	17	XXVI	B.	8
Sunday	1708	Monday	18	VII	A. G.	9
Tuesday...	1709	.....	19	XVIII	F.	10
Wednesday..	1710	.....	1	*	E.	11
Thursday...	1711	.....	2	XI	D.	12
Friday..	1712	Saturday ...	3	XXII	C. B.	13
Sunday	1713	.....	4	III	A.	14
Monday	1714	.....	5	XIV	G.	15
Tuesday...	1715	.....	6	XXV	F.	16
Wednesday..	1716	Thursday...	7	VI	E. D.	17
Friday	1717	.....	8	XVII	C.	18
Saturday ...	1718	.....	9	XXVIII	B.	19
Sunday	1719	.....	10	IX	A.	20
Monday	1720	Tuesday...	11	XX	G. F.	21
Wednesday..	1721	.....	12	I	E.	22
Thursday...	1722	.....	13	XII	D.	23
Friday	1723	.....	14	XXIII	C.	24
Saturday ...	1724	Sunday ...	15	IV	B. A.	25
Monday	1725	.....	16	XV	G.	26
Tuesday...	1726	.....	17	XXVI	F.	27
Wednesday..	1727	.....	18	VII	E.	28
Thursday...	1728	Friday	19	XVIII	D. C.	1
Saturday...	1729	.....	1	*	B.	2
Sunday	1730	.....	2	XI	A.	3
Monday	1731	.....	3	XXII	G.	4
Tuesday...	1732	Wednesday..	4	III	F. E.	5
Thursday ...	1733	.....	5	XIV	D.	6
Friday	1734	.....	6	XXV	C.	7

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Saturday ...	1735	.....	7	VI	B.	8
Sunday	1736	Monday	8	XVII	A. G.	9
Tuesday	1737	.....	9	XXVIII	F.	10
Wednesday ..	1738	.....	10	IX	E.	11
Thursday	1739	.....	11	XX	D.	12
Friday	1740	Saturday ...	12	I	C. B.	13
Sunday	1741	.....	13	XII	A.	14
Monday	1742	.....	14	XXIII	G.	15
Tuesday	1743	.....	15	IV	F.	16
Wednesday ..	1744	Thursday ...	16	XV	E. D.	17
Friday	1745	.....	17	XXVI	C.	18
Saturday	1746	.....	18	VII	B.	19
Sunday	1747	.....	19	XVIII	A.	20
Monday	1748	Tuesday	1	*	G. F.	21
Wednesday ..	1749	.....	2	XI	E.	22
Thursday ...	1750	.....	3	XXII	D.	23
Friday	1751	.....	4	III	C.	24
Saturday	1752	Sunday	5	XIV	B. A.	25
Monday	1753	.....	6	XXV	G.	26
Tuesday	1754	.....	7	VI	F.	27
Wednesday ..	1755	.....	8	XVII	E.	28
Thursday	1756	Friday	9	XXVIII	D. C.	1
Saturday	1757	.....	10	IX	B.	2
Sunday	1758	.....	11	XX	A.	3
Monday	1759	.....	12	I	G.	4
Tuesday	1760	Wednesday ..	13	XII	F. E.	5
Thursday ...	1761	.....	14	XXIII	D.	6
Friday	1762	.....	15	IV	C.	7
Saturday	1763	.....	16	XV	B.	8
Sunday	1764	Monday	17	XXVI	A. G.	9
Tuesday	1765	.....	18	VII	F.	10
Wednesday ..	1766	.....	19	XVIII	E.	11
Thursday ...	1767	.....	1	*	D.	12
Friday	1768	Saturday ...	2	XI	C. B.	13
Sunday	1769	.....	3	XXII	A.	14
Monday	1770	.....	4	III	G.	15
Tuesday	1771	.....	5	XIV	F.	16
Wednesday ..	1772	Thursday ...	6	XXV	E. D.	17
Friday	1773	.....	7	VI	C.	18
Saturday	1774	.....	8	XVII	B.	19
Sunday	1775	.....	9	XXVIII	A.	20
Monday	1776	Tuesday	10	IX	G. F.	21
Wednesday ..	1777	.....	11	XX	E.	22
Thursday ...	1778	.....	12	I	D.	23
Friday	1779	.....	13	XII	C.	24
Saturday	1780	Sunday	14	XXIII	B. A.	25
Monday	1781	.....	15	IV	G.	26

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D, L.	S. C.
Tuesday....	1782	.....	16	XV	F.	27
Wednesday..	1783	.....	17	XXVI	E.	28
Thursday...	1784	Friday..	18	VII	D. C.	1
Saturday....	1785	.....	19	XVIII	B.	2
Sunday.....	1786	.....	1	*	A.	3
Monday....	1787	.....	2	XI	G.	4
Tuesday....	1788	Wednesday..	3	XXII	F. E.	5
Thursday...	1789	.....	4	III	D.	6
Friday.....	1790	.....	5	XIV	C.	7
Saturday....	1791	.....	6	XXV	B.	8
Sunday.....	1792	Monday....	7	VI	A. G.	9
Tuesday....	1793	.....	8	XVII	F.	10
Wednesday..	1794	.....	9	XXVIII	E.	11
Thursday...	1795	.....	10	IX	D.	12
Friday.....	1796	Saturday....	11	XX	C. B.	13
Sunday....	1797	.....	12	I	A.	14
Monday....	1798	.....	13	XII	G.	15
Tuesday....	1799	.....	14	XXIII	F.	16
Wednesday..	1800	.....	15	IV	E.	17
Thursday...	1801	.....	16	XV	D.	18
Friday.....	1802	.....	17	XXVI	C.	19
Saturday....	1803	.....	18	VII	B.	20
Sunday....	1804	Monday....	19	XVIII	A. G.	21
Tuesday....	1805	.....	1	*	F.	22
Wednesday..	1806	.....	2	XI	E.	23
Thursday...	1807	.....	3	XXII	D.	24
Friday.....	1808	Saturday....	4	III	C. B.	25
Sunday.....	1809	.....	5	XIV	A.	26
Monday....	1810	.....	6	XXV	G.	27
Tuesday....	1811	.....	7	VI	F.	28
Wednesday..	1812	Thursday....	8	XVII	E. D.	1
Friday.....	1813	.....	9	XXVIII	C.	2
Saturday....	1814	.....	10	IX	B.	3
Sunday.....	1815	.....	11	XX	A.	4
Monday....	1816	Tuesday....	12	I	G. F.	5
Wednesday..	1817	.....	13	XII	E.	6
Thursday...	1818	.....	14	XXIII	D.	7
Friday.....	1819	.....	15	IV	C.	8
Saturday....	1820	Sunday....	16	XV	B. A.	9
Monday....	1821	.....	17	XXVI	G.	10
Tuesday....	1822	.....	18	VII	F.	11
Wednesday..	1823	.....	19	XVIII	E.	12
Thursday...	1824	Friday,....	1	*	D. C.	13
Saturday....	1825	.....	2	XI	B.	14
Sunday.....	1826	.....	3	XXII	A.	15
Monday....	1827	.....	4	III	G.	16
Tuesday....	1828	Wednesday..	5	XIV	F. E.	17

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Thursday...	1829	.....	6	XXV	D.	18
Friday.....	1830	.....	7	VI	C.	19
Saturday....	1831	.....	8	XVII	B.	20
Sunday.....	1832	Monday....	9	XXVIII	A. G.	21
Tuesday....	1833	.....	10	IX	F.	22
Wednesday..	1834	.....	11	XX	E.	23
Thursday...	1835	.....	12	I	D.	24
Friday.....	1836	Saturday....	13	XII	C. B.	25
Sunday.....	1837	.....	14	XXIII	A.	26
Monday....	1838	.....	15	IV	G.	27
Tuesday....	1839	.....	16	XV	F.	28
Wednesday..	1840	Thursday...	17	XXVI	E. D.	1
Friday.....	1841	.....	18	VII	C.	2
Saturday....	1842	.....	19	XVIII	B.	3
Sunday.....	1843	.....	1	*	A.	4
Monday....	1844	Tuesday....	2	XI	G. F.	5
Wednesday..	1845	.....	3	XXII	E.	6
Thursday...	1846	.....	4	III	D.	7
Friday.....	1847	.....	5	XIV	C.	8
Saturday....	1848	Sunday.....	6	XXV	B. A.	9
Monday....	1849	.....	7	VI	G.	10
Tuesday....	1850	.....	8	XVII	F.	11
Wednesday..	1851	.....	9	XXVIII	E.	12
Thursday...	1852	Friday.....	10	IX	D. C.	13
Saturday....	1853	.....	11	XX	B.	14
Sunday.....	1854	.....	12	I	A.	15
Monday....	1855	.....	13	XII	G.	16
Tuesday....	1856	Wednesday..	14	XXIII	F. E.	17
Thursday...	1857	.....	15	IV	D.	18
Friday.....	1858	.....	16	XV	C.	19
Saturday....	1859	.....	17	XXVI	B.	20
Sunday.....	1860	Monday....	18	VII	A. G.	21
Tuesday....	1861	.....	19	XVIII	F.	22
Wednesday..	1862	.....	1	*	E.	23
Thursday...	1863	.....	2	XI	D.	24
Friday.....	1864	Saturday....	3	XXII	C. B.	25
Sunday.....	1865	.....	4	III	A.	26
Monday....	1866	.....	5	XIV	G.	27
Tuesday....	1867	.....	6	XXV	F.	28
Wednesday..	1868	Thursday...	7	VI	E. D.	1
Friday.....	1869	.....	8	XVII	C.	2
Saturday....	1870	.....	9	XXVIII	B.	3
Sunday.....	1871	.....	10	IX	A.	4
Monday....	1872	Tuesday....	11	XX	G. F.	5
Wednesday..	1873	.....	12	I	E.	6
Thursday...	1874	.....	13	XII	D.	7
Friday.....	1875	.....	14	XXIII	C.	8

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Saturday ...	1876	Sunday. ...	15	IV	B. A.	9
Monday	1877	.....	16	XV	G.	10
Tuesday	1878	.....	17	XXVI	F.	11
Wednesday..	1879	.....	18	VII	E.	12
Thursday... 1880		Friday.....	19	XVIII	D. C.	13
Saturday....	1881	.....	1	*	B.	14
Sunday.....	1882	.....	2	XI	A.	15
Monday.....	1883	.....	3	XXII	G.	16
Tuesday	1884	Wednesday..	4	III	F. E.	17
Thursday... 1885		.....	5	XIV	D.	18
Friday.....	1886	.....	6	XXV	C.	19
Saturday....	1887	.....	7	VI	B.	20
Sunday.....	1888	Monday.....	8	XVII	A. G.	21
Tuesday....	1889	.....	9	XXVIII	F.	22
Wednesday..	1890	.....	10	IX	E.	23
Thursday... 1891		.....	11	XX	D.	24
Friday.....	1892	Saturday...	12	I	C. B.	25
Sunday.....	1893	.....	13	XII	A.	26
Monday.....	1894	.....	14	XXIII	G.	27
Tuesday....	1895	.....	15	IV	F.	28
Wednesday..	1896	Thursday... 1897	16	XV	E. D.	1
Friday.....	1897	.....	17	XXVI	C.	2
Saturday....	1898	.....	18	VII	B.	3
Sunday.....	1899	.....	19	XVIII	A.	4
Monday.....	1900	.....	1	XXIX	G.	5
Tuesday....	1901	.....	2	X	F.	6
Wednesday..	1902	.....	3	XXI	E.	7
Thursday... 1903		.....	4	II	D.	8
Friday.....	1904	Saturday....	5	XIII	C. B.	9
Sunday.....	1905	.....	6	XXIV	A.	10
Monday.....	1906	.....	7	V	G.	11
Tuesday....	1907	.....	8	XVI	F.	12
Wednesday..	1908	Thursday... 1909	9	XXVII	E. D.	13
Friday.....	1909	.....	10	VIII	C.	14
Saturday....	1910	.....	11	XIX	B.	15
Sunday.....	1911	.....	12	*	A.	16
Monday.....	1912	Tuesday....	13	XI	G. F.	17
Wednesday..	1913	.....	14	XXII	E.	18
Thursday... 1914		.....	15	III	D.	19
Friday.....	1915	.....	16	XIV	C.	20
Saturday....	1916	Sunday.....	17	XXV	B. A.	21
Monday.....	1917	.....	18	VI	G.	22
Tuesday....	1918	.....	19	XVII	F.	23
Wednesday..	1919	.....	1	XXIX	E.	24
Thursday... 1920		Friday.....	2	X	D. C.	25
Saturday....	1921	.....	3	XXI	B.	26
Sunday.....	1922	.....	4	II	A.	27

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Monday	1923	.....	5	XIII	G.	28
Tuesday	1924	Wednesday..	6	XXIV	F. E.	1
Thursday....	1925	.....	7	V	D.	2
Friday.....	1926	.....	8	XVI	C.	3
Saturday....	1927	.....	9	XXVII	B.	4
Sunday.....	1928	Monday	10	VIII	A. G.	5
Tuesday	1929	.....	11	XIX	F.	6
Wednesday..	1930	.....	12	*	E.	7
Thursday....	1931	.....	13	XI	D.	8
Friday.....	1932	Saturday....	14	XXII	C. B.	9
Sunday.....	1933	.....	15	III	A.	10
Monday	1934	.....	16	XIV	G.	11
Tuesday....	1935	.....	17	XXV	F.	12
Wednesday..	1936	Thursday....	18	VI	E. D.	13
Friday.....	1937	.....	19	XVII	C.	14
Saturday....	1938	.....	1	XXIX	B.	15
Sunday.....	1939	.....	2	X	A.	16
Monday	1940	Tuesday	3	XXI	G. F.	17
Wednesday..	1941	.....	4	II	E.	18
Thursday....	1942	.....	5	XIII	D.	19
Friday.....	1943	.....	6	XXIV	C.	20
Saturday....	1944	Sunday....	7	V	B. A.	21
Monday	1945	.....	8	XVI	G.	22
Tuesday....	1946	.....	9	XXVII	F.	23
Wednesday..	1947	.....	10	VIII	E.	24
Thursday....	1948	Friday.....	11	XIX	D. C.	25
Saturday....	1949	.....	12	*	B.	26
Sunday.....	1950	.....	13	XI	A.	27
Monday	1951	.....	14	XXII	G.	28
Tuesday	1952	Wednesday..	15	III	F. E.	1
Thursday....	1953	.....	16	XIV	D.	2
Friday.....	1954	.....	17	XXV	C.	3
Saturday....	1955	.....	18	VI	B.	4
Sunday.....	1956	Monday	19	XVII	A. G.	5
Tuesday....	1957	.....	1	XXIX	F.	6
Wednesday..	1958	.....	2	X	E.	7
Thursday....	1959	.....	3	XXI	D.	8
Friday.....	1960	Saturday....	4	II	C. B.	9
Sunday.....	1961	.....	5	XIII	A.	10
Monday	1962	.....	6	XXIV	G.	11
Tuesday....	1963	.....	7	V	F.	12
Wednesday..	1964	Thursday....	8	XVI	E. D.	13
Friday.....	1965	.....	9	XXVII	C.	14
Saturday....	1966	.....	10	VIII	B.	15
Sunday.....	1967	.....	11	XIX	A.	16
Monday	1968	Tuesday	12	*	G. F.	17
Wednesday..	1969	.....	13	XI	E.	18

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Saturday ...	1876	Sunday. ...	15	IV	B. A.	9
Monday	1877	.....	16	XV	G.	10
Tuesday	1878	.....	17	XXVI	F.	11
Wednesday..	1879	.....	18	VII	E.	12
Thursday....	1880	Friday.....	19	XVIII	D. C.	13
Saturday....	1881	.....	1	*	B.	14
Sunday.....	1882	.....	2	XI	A.	15
Monday	1883	.....	3	XXII	G.	16
Tuesday	1884	Wednesday..	4	III	F. E.	17
Thursday....	1885	.....	5	XIV	D.	18
Friday.....	1886	.....	6	XXV	C.	19
Saturday....	1887	.....	7	VI	B.	20
Sunday.....	1888	Monday	8	XVII	A. G.	21
Tuesday....	1889	.....	9	XXVIII	F.	22
Wednesday..	1890	.....	10	IX	E.	23
Thursday....	1891	.....	11	XX	D.	24
Friday.....	1892	Saturday....	12	I	C. B.	25
Sunday.....	1893	.....	13	XII	A.	26
Monday	1894	.....	14	XXIII	G.	27
Tuesday....	1895	.....	15	IV	F.	28
Wednesday..	1896	Thursday....	16	XV	E. D.	1
Friday.....	1897	.....	17	XXVI	C.	2
Saturday....	1898	.....	18	VII	B.	3
Sunday.....	1899	.....	19	XVIII	A.	4
Monday	1900	.....	1	XXIX	G.	5
Tuesday....	1901	.....	2	X	F.	6
Wednesday..	1902	.....	3	XXI	E.	7
Thursday....	1903	.....	4	II	D.	8
Friday.....	1904	Saturday....	5	XIII	C. B.	9
Sunday.....	1905	.....	6	XXIV	A.	10
Monday	1906	.....	7	V	G.	11
Tuesday....	1907	.....	8	XVI	F.	12
Wednesday..	1908	Thursday....	9	XXVII	E. D.	13
Friday.....	1909	.....	10	VIII	C.	14
Saturday....	1910	.....	11	XIX	B.	15
Sunday.....	1911	.....	12	*	A.	16
Monday	1912	Tuesday	13	XI	G. F.	17
Wednesday..	1913	.....	14	XXII	E.	18
Thursday....	1914	.....	15	III	D.	19
Friday.....	1915	.....	16	XIV	C.	20
Saturday....	1916	Sunday.....	17	XXV	B. A.	21
Monday	1917	.....	18	VI	G.	22
Tuesday....	1918	.....	19	XVII	F.	23
Wednesday..	1919	.....	1	XXIX	E.	24
Thursday....	1920	Friday.....	2	X	D. C.	25
Saturday....	1921	.....	3	XXI	A.	26
Sunday.....	1922	.....	4	II	B.	27

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Monday	1923	.....	5	XIII	G.	28
Tuesday	1924	Wednesday..	6	XXIV	F. E.	1
Thursday....	1925	.....	7	V	D.	2
Friday.....	1926	.....	8	XVI	C.	3
Saturday....	1927	.....	9	XXVII	B.	4
Sunday.....	1928	Monday	10	VIII	A. G.	5
Tuesday	1929	.....	11	XIX	F.	6
Wednesday..	1930	.....	12	*	E.	7
Thursday....	1931	.....	13	XI	D.	8
Friday.....	1932	Saturday....	14	XXII	C. B.	9
Sunday.....	1933	.....	15	III	A.	10
Monday	1934	.....	16	XIV	G.	11
Tuesday	1935	.....	17	XXV	F.	12
Wednesday..	1936	Thursday....	18	VI	E. D.	13
Friday.....	1937	.....	19	XVII	C.	14
Saturday....	1938	.....	1	XXIX	B.	15
Sunday.....	1939	.....	2	X	A.	16
Monday	1940	Tuesday	3	XXI	G. F.	17
Wednesday..	1941	.....	4	II	E.	18
Thursday....	1942	.....	5	XIII	D.	19
Friday.....	1943	.....	6	XXIV	C.	20
Saturday....	1944	Sunday....	7	V	B. A.	21
Monday	1945	.....	8	XVI	G.	22
Tuesday	1946	.....	9	XXVII	F.	23
Wednesday..	1947	.....	10	VIII	E.	24
Thursday....	1948	Friday.....	11	XIX	D. C.	25
Saturday....	1949	.....	12	*	B.	26
Sunday.....	1950	.....	13	XI	A.	27
Monday	1951	.....	14	XXII	G.	28
Tuesday	1952	Wednesday..	15	III	F. E.	1
Thursday....	1953	.....	16	XIV	D.	2
Friday.....	1954	.....	17	XXV	C.	3
Saturday....	1955	.....	18	VI	B.	4
Sunday.....	1956	Monday	19	XVII	A. G.	5
Tuesday	1957	.....	1	XXIX	F.	6
Wednesday..	1958	.....	2	X	E.	7
Thursday....	1959	.....	3	XXI	D.	8
Friday.....	1960	Saturday....	4	II	C. B.	9
Sunday.....	1961	.....	5	XIII	A.	10
Monday	1962	.....	6	XXIV	G.	11
Tuesday	1963	.....	7	V	F.	12
Wednesday..	1964	Thursday....	8	XVI	E. D.	13
Friday.....	1965	.....	9	XXVII	C.	14
Saturday....	1966	.....	10	VIII	B.	15
Sunday.....	1967	.....	11	XIX	A.	16
Monday	1968	Tuesday	12	*	G. F.	17
Wednesday..	1969	.....	13	XI	E.	18

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Tuesday...	2064	Wednesday..	13	XI	F. E.	1
Thursday...	2065	.....	14	XXII	D.	2
Friday.....	2066	.....	15	III	C.	3
Saturday...	2067	.....	16	XIV	B.	4
Sunday.....	2068	Monday.....	17	XXV	A. G.	5
Tuesday....	2069	.....	18	VI	F.	6
Wednesday..	2070	.....	19	XVII	E.	7
Thursday...	2071	.....	1	XXIX	D.	8
Friday.....	2072	Saturday....	2	X	C. B.	9
Sunday.....	2073	.....	3	XXI	A.	10
Monday.....	2074	.....	4	II	G.	11
Tuesday....	2075	.....	5	XIII	F.	12
Wednesday..	2076	Thursday...	6	XXIV	E. D.	13
Friday.....	2077	.....	7	V	C.	14
Saturday....	2078	.....	8	XVI	B.	15
Sunday.....	2079	.....	9	XXVII	A.	16
Monday.....	2080	Tuesday....	10	VIII	G. F.	17
Wednesday..	2081	.....	11	XIX	E.	18
Thursday...	2082	.....	12	*	D.	19
Friday.....	2083	.....	13	XI	C.	20
Saturday....	2084	Sunday.....	14	XXII	B. A.	21
Monday.....	2085	.....	15	III	G.	22
Tuesday....	2086	.....	16	XIV	F.	23
Wednesday..	2087	.....	17	XXV	E.	24
Thursday...	2088	Friday.....	18	VI	D. C.	25
Saturday....	2089	.....	19	XVII	B.	26
Sunday.....	2090	.....	1	XXIX	A.	27
Monday.....	2091	.....	2	X	G.	28
Tuesday....	2092	Wednesday..	3	XXI	F. E.	1
Thursday...	2093	.....	4	II	D.	2
Friday.....	2094	.....	5	XIII	C.	3
Saturday....	2095	.....	6	XXIV	B.	4
Sunday.....	2096	Monday.....	7	V	A. G.	5
Tuesday....	2097	.....	8	XVI	F.	6
Wednesday..	2098	.....	9	XXVII	E.	7
Thursday...	2099	.....	10	VIII	D.	8
Friday.....	2100	.....	11	XIX	C.	9
Saturday....	2101	.....	12	*	B.	10
Sunday.....	2102	.....	13	XI	A.	11
Monday.....	2103	.....	14	XXII	G.	12
Tuesday....	2104	Wednesday..	15	III	F. E.	13
Thursday...	2105	.....	16	XIV	D.	14
Friday....	2106	.....	17	XXV	C.	15
Saturday....	2107	.....	18	VI	B.	16
Sunday.....	2108	Monday.....	19	XVII	A. G.	17
Tuesday....	2109	.....	1	XXIX	F.	18
Wednesday..	2110	.....	2	X	E.	19

Tables—(Continued).

BEGINS.	B. C.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Thursday...	2111	.....	3	XXI	D.	20
Friday.....	2112	Saturday...	4	II	C. B.	21
Sunday.....	2113	.....	5	XIII	A.	22
Monday.....	2114	.....	6	XXIV	G.	23
Tuesday.....	2115	.....	7	V	F.	24
Wednesday...	2116	Thursday...	8	XVI	E. D.	25
Friday.....	2117	.....	9	XXVII	C.	26
Saturday...	2118	.....	10	VIII	B.	27
Sunday.....	2119	.....	11	XIX	A.	28
Monday.....	2120	Tuesday....	12	*	G. F.	1
Wednesday...	2121	.....	13	XI	E.	2
Thursday...	2122	.....	14	XXII	D.	3
Friday.....	2123	.....	15	III	C.	4
Saturday...	2124	Sunday.....	16	XIV	B. A.	5
Monday.....	2125	.....	17	XXV	G.	6
Tuesday....	2126	.....	18	VI	F.	7
Wednesday..	2127	.....	19	XVII	E.	8
Thursday...	2128	Friday.....	1	XXIX	D. C.	9
Saturday...	2129	.....	2	X	B.	10
Sunday.....	2130	.....	3	XXI	A.	11
Monday.....	2131	.....	4	II	G.	12
Tuesday....	2132	Wednesday..	5	XIII	F. E.	13
Thursday...	2133	.....	6	XXIV	D.	14
Friday.....	2134	.....	7	V	C.	15
Saturday...	2135	.....	8	XVI	B.	16
Sunday.....	2136	Monday....	9	XXVII	A. G.	17
Tuesday....	2137	.....	10	VIII	F.	18
Wednesday..	2138	.....	11	XIX	E.	19
Thursday...	2139	.....	12	*	D.	20
Friday.....	2140	Saturday...	13	XI	C. B.	21
Sunday.....	2141	.....	14	XXII	A.	22
Monday....	2142	.....	15	III	G.	23
Tuesday....	2143	.....	16	XIV	F.	24
Wednesday..	2144	Thursday...	17	XXV	E. D.	25
Friday.....	2145	.....	18	VI	C.	26
Saturday....	2146	.....	19	XVII	B.	27
Sunday.....	2147	.....	1	XXIX	A.	28
Monday....	2148	Tuesday....	2	X	G. F.	1
Wednesday..	2149	.....	3	XXI	E.	2
Thursday...	2150	.....	4	II	D.	3
Friday.....	2151	.....	5	XIII	C.	4
Saturday...	2152	Sunday.....	6	XXIV	B. A.	5
Monday.....	2153	.....	7	V	G.	6
Tuesday....	2154	.....	8	XVI	F.	7
Wednesday..	2155	.....	9	XXVII	E.	8
Thursday...	2156	Friday.....	10	VIII	D. C.	9
Saturday....	2157	.....	11	XIX	B.	10

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Sunday.....	2158	.....	12	*	A.	11
Monday.....	2159	.....	13	XI	G.	12
Tuesday....	2160	Wednesday..	14	XXII	F. E.	13
Thursday....	2161	.....	15	III	D.	14
Friday.....	2162	.....	16	XIV	C.	15
Saturday....	2163	.....	17	XXV	B.	16
Sunday.....	2164	Monday....	18	VI	A. G.	17
Tuesday.....	2165	.....	19	XVII	F.	18
Wednesday..	2166	.....	1	XXIX	E.	19
Thursday....	2167	.....	2	X	D.	20
Friday.....	2168	Saturday....	3	XXI	C. B.	21
Sunday.....	2169	.....	4	II	A.	22
Monday.....	2170	.....	5	XIII	G.	23
Tuesday.....	2171	.....	6	XXIV	F.	24
Wednesday..	2172	Thursday....	7	V	E. D.	25
Friday.....	2173	.....	8	XVI	C.	26
Saturday....	2174	.....	9	XXVII	B.	27
Sunday.....	2175	.....	10	VIII	A.	28
Monday.....	2176	Tuesday....	11	XIX	G. F.	1
Wednesday..	2177	.....	12	*	E.	2
Thursday....	2178	.....	13	XI	D.	3
Friday.....	2179	.....	14	XXII	C.	4
Saturday....	2180	Sunday.....	15	II	B. A.	5
Monday.....	2181	.....	16	XIV	G.	6
Tuesday....	2182	.....	17	XXV	F.	7
Wednesday..	2183	.....	18	VI	E.	8
Thursday....	2184	Friday.....	19	XVII	D. C.	9
Saturday....	2185	.....	1	XXIX	B.	10
Sunday.....	2186	.....	2	X	A.	11
Monday.....	2187	.....	3	XXI	G.	12
Tuesday....	2188	Wednesday..	4	II	F. E.	13
Thursday....	2189	.....	5	XIII	D.	14
Friday.....	2190	.....	6	XXIV	C.	15
Saturday....	2191	.....	7	V	B.	16
Sunday.....	2192	Monday....	8	XVI	A. G.	17
Tuesday....	2193	.....	9	XXVII	F.	18
Wednesday..	2194	.....	10	VIII	E.	19
Thursday....	2195	.....	11	XIX	D.	20
Friday.....	2196	Saturday....	12	*	C. B.	21
Sunday.....	2197	.....	13	XI	A.	22
Monday.....	2198	.....	14	XXII	G.	23
Tuesday....	2199	.....	15	III	F.	24
Wednesday..	2200	.....	16	XIII	E.	25
Thursday....	2201	.....	17	XXIV	D.	26
Friday.....	2202	.....	18	V	C.	27
Saturday....	2203	.....	19	XVI	B.	28
Sunday.....	2204	Monday....	1	XXVIII	A. G.	1

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Tuesday	2205	...	2	IX	F.	2
Wednesday..	2206	.....	3	XX	E.	3
Thursday....	2207	.....	4	I	D.	4
Friday.....	2208	Saturday ...	5	XII	C. B.	5
Sunday.....	2209	.....	6	XXIII	A.	6
Monday	2210	.....	7	IV	G.	7
Tuesday....	2211	.....	8	XV	F.	8
Wednesday..	2212	Thursday...	9	XXVI	E. D.	9
Friday.....	2213	.....	10	VII	C.	10
Saturday ...	2214	.....	11	XVIII	B.	11
Sunday.....	2215	.....	12	XXIX	A.	12
Monday	2216	Tuesday....	13	X	G. F.	13
Wednesday..	2217	.....	14	XXI	E.	14
Thursday....	2218	.....	15	II	D.	15
Friday.....	2219	.....	16	XIII	C.	16
Saturday ...	2220	Sunday.....	17	XXIV	B. A.	17
Monday	2221	.....	18	V	G.	18
Tuesday....	2222	.....	19	XVI	F.	19
Wednesday..	2223	.....	1	XXVIII	E.	20
Thursday....	2224	Friday.....	2	IX	D. C.	21
Saturday ...	2225	.....	3	XX	B.	22
Sunday.....	2226	.....	4	I	A.	23
Monday	2227	.....	5	XII	G.	24
Tuesday....	2228	Wednesday..	6	XXIII	F. E.	25
Thursday....	2229	.....	7	IV	D.	26
Friday.....	2230	.....	8	XV	C.	27
Saturday ...	2231	.....	9	XXVI	B.	28
Sunday.....	2232	Monday....	10	VII	A. G.	1
Tuesday....	2233	.....	11	XVIII	F.	2
Wednesday..	2234	.....	12	XXIX	E.	3
Thursday....	2235	.....	13	X	D.	4
Friday.....	2236	Saturday ...	14	XXI	C. B.	5
Sunday.....	2237	.....	15	II	A.	6
Monday	2238	.....	16	XIII	G.	7
Tuesday....	2239	.....	17	XXIV	F.	8
Wednesday..	2240	Thursday...	18	V	E. D.	9
Friday.....	2241	.....	19	XVI	C.	10
Saturday ...	2242	.....	1	XXVIII	B.	11
Sunday.....	2243	.....	2	IX	A.	12
Monday	2244	Tuesday....	3	XX	G. F.	13
Wednesday..	2245	.....	4	I	E.	14
Thursday....	2246	.....	5	XII	D.	15
Friday.....	2247	.....	6	XXIII	C.	16
Saturday....	2248	Sunday.....	7	IV	B. A.	17
Monday	2249	.....	8	XV	G.	18
Tuesday....	2250	.....	9	XXVI	F.	19
Wednesday..	2251	.....	10	VII	E.	20

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Thursday...	2252	Friday...	11	XVIII	D. C.	21
Saturday...	2253	.....	12	XXIX	B.	22
Sunday.....	2254	.....	13	X	A.	23
Monday.....	2255	.....	14	XXI	G.	24
Tuesday....	2256	Wednesday..	15	II	F. E.	25
Thursday...	2257	.....	16	XIII	D.	26
Friday.....	2258	.....	17	XXIV	C.	27
Saturday....	2259	.....	18	V	B.	28
Sunday.....	2260	Monday.....	19	XVI	A. G.	1
Tuesday....	2261	.....	1	XXVIII	F.	2
Wednesday..	2262	.....	2	IX	E.	3
Thursday...	2263	.....	3	XX	D.	4
Friday.....	2264	Saturday....	4	I	C. B.	5
Sunday.....	2265	.....	5	XII	A.	6
Monday.....	2266	.....	6	XXIII	G.	7
Tuesday....	2267	.....	7	IV	F.	8
Wednesday..	2268	Thursday....	8	XV	E. D.	9
Friday.....	2269	.....	9	XXVI	C.	10
Saturday....	2270	.....	10	VII	B.	11
Sunday.....	2271	.....	11	XVIII	A.	12
Monday.....	2272	Tuesday....	12	XXIX	G. F.	13
Wednesday..	2273	.....	13	X	E.	14
Thursday....	2274	.....	14	XXI	D.	15
Friday.....	2275	.....	15	II	C.	16
Saturday....	2276	Sunday.....	16	XIII	B. A.	17
Monday.....	2277	.....	17	XXIV	G.	18
Tuesday....	2278	.....	18	V	F.	19
Wednesday..	2279	.....	19	XVI	E.	20
Thursday....	2280	Friday.....	1	XXVIII	D. C.	21
Saturday....	2281	.....	2	IX	B.	22
Sunday.....	2282	.....	3	XX	A.	23
Monday.....	2283	.....	4	I	G.	24
Tuesday....	2284	Wednesday..	5	XII	F. E.	25
Thursday....	2285	.....	6	XXIII	D.	26
Friday.....	2286	.....	7	IV	C.	27
Saturday....	2287	.....	8	XV	B.	28
Sunday.....	2288	Monday.....	9	XXVI	A. G.	1
Tuesday....	2289	.....	10	VII	F.	2
Wednesday..	2290	.....	11	XVIII	E.	3
Thursday....	2291	.....	12	XXIX	D.	4
Friday.....	2292	Saturday....	13	X	C. B.	5
Sunday.....	2293	.....	14	XXI	A.	6
Monday.....	2294	.....	15	II	G.	7
Tuesday....	2295	.....	16	XIII	F.	8
Wednesday..	2296	Thursday....	17	XXIV	E. D.	9
Friday.....	2297	.....	18	V	C.	10
Saturday....	2298	.....	19	XVI	B.	11

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Sunday.....	2299	.....	1	XXVIII	A.	12
Monday.....	2300	.....	2	VIII	G.	13
Tuesday.....	2301	.....	3	XIX	F.	14
Wednesday..	2302	.....	4	*	E.	15
Thursday....	2303	.....	5	XI	D.	16
Friday.....	2304	Saturday...	6	XXII	C. B.	17
Sunday.....	2305	.....	7	III	A.	18
Monday.....	2306	.....	8	XIV	G.	19
Tuesday....	2307	.....	9	XXV	F.	20
Wednesday.	2308	Thursday..	10	VI	E. D.	21
Friday....	2309	.....	11	XVII	C.	22
Saturday...	2310	.....	12	XXVIII	B.	23
Sunday.....	2311	.....	13	IX	A.	24
Monday.....	2312	Tuesday....	14	XX	G. F.	25
Wednesday..	2313	.....	15	I	E.	26
Thursday....	2314	.....	16	XII	D.	27
Friday.....	2315	.....	17	XXIII	C.	28
Saturday...	2316	Sunday.....	18	IV	B. A.	1
Monday.....	2317	.....	19	XV	G.	2
Tuesday....	2318	.....	1	XXVII	F.	3
Wednesday..	2319	.....	2	VIII	E.	4
Thursday....	2320	Friday.....	3	XIX	D. C.	5
Saturday....	2321	.....	4	*	B.	6
Sunday.....	2322	.....	5	XI	A.	7
Monday.....	2323	.....	6	XXII	G.	8
Tuesday....	2324	Wednesday..	7	III	F. E.	9
Thursday....	2325	.....	8	XIV	D.	10
Friday.....	2326	.....	9	XXVIII	C.	11
Saturday....	2327	.....	10	VI	B.	12
Sunday.....	2328	Monday.....	11	XVII	A. G.	13
Tuesday....	2329	.....	12	XXVIII	F.	14
Wednesday..	2330	.....	13	IX	E.	15
Thursday....	2331	.....	14	XX	D.	16
Friday.....	2332	Saturday....	15	I	C. B.	17
Sunday....	2333	.....	16	XII	A.	18
Monday.....	2334	.....	17	XXIII	G.	19
Tuesday....	2335	.....	18	IV	F.	20
Wednesday..	2336	Thursday....	19	XV	E. D.	21
Friday.....	2337	.....	1	XXVII	C.	22
Saturday....	2338	.....	2	VIII	B.	23
Sunday.....	2339	.....	3	XIX	A.	24
Monday....	2340	Tuesday....	4	*	G. F.	25
Wednesday..	2341	.....	5	XI	E.	26
Thursday....	2342	.....	6	XXII	D.	27
Friday.....	2343	.....	7	III	C.	28
Saturday....	2344	Sunday.....	8	XIV	B. A.	1
Monday.....	2345	.....	9	XXV	G.	2

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	EPOCHS.	D. L.	S. C.
Tuesday...	2346	.....	10	VI	F.	3
Wednesday...	2347	.....	11	XVII	E.	4
Thursday...	2348	Friday..	12	XXVIII	D. C.	5
Saturday...	2349	.....	13	IX	B.	6
Sunday...	2350	.....	14	XX	A.	7
Monday...	2351	.....	15	I	G.	8
Tuesday...	2352	Wednesday..	16	XII	F. E.	9
Thursday...	2353	.....	17	XXIII	D.	10
Friday...	2354	.....	18	IV	C.	11
Saturday...	2355	.....	19	XV	B.	12
Sunday...	2356	Monday....	1	XXVII	A. G.	13
Tuesday...	2357	.....	2	VIII	F.	14
Wednesday...	2358	.....	3	XIX	E.	15
Thursday...	2359	.....	4	*	D.	16
Friday...	2360	Saturday....	5	XI	C. B.	17
Sunday...	2361	.....	6	XXII	A.	18
Monday...	2362	.....	7	III	G.	19
Tuesday...	2363	.....	8	XIV	F.	20
Wednesday...	2364	Thursday...	9	XXV	E. D.	21
Friday...	2365	.....	10	VI	C.	22
Saturday...	2366	.....	11	XVII	B.	23
Sunday...	2367	.....	12	XXVIII	A.	24
Monday...	2368	Tuesday....	13	IX	G. F.	25
Wednesday...	2369	.....	14	XX	E.	26
Thursday...	2370	.....	15	I	D.	27
Friday...	2371	.....	16	XII	C.	28
Saturday...	2372	Sunday....	17	XXIII	B. A.	1
Monday...	2373	.....	18	IV	G.	2
Tuesday...	2374	.....	19	XV	F.	3
Wednesday...	2375	.....	1	XXVII	E.	4
Thursday...	2376	Friday.....	2	VIII	D. C.	5
Saturday...	2377	.....	3	XIX	B.	6
Sunday...	2378	.....	4	*	A.	7
Monday...	2379	.....	5	XI	G.	8
Tuesday...	2380	Wednesday..	6	XXII	F. E.	9
Thursday...	2381	.....	7	III	D.	10
Friday...	2382	.....	8	XIV	C.	11
Saturday...	2383	.....	9	XXV	B.	12
Sunday...	2384	Monday....	10	VI	A. G.	13
Tuesday...	2385	.....	11	XVII	F.	14
Wednesday...	2386	.....	12	XXVIII	E.	15
Thursday...	2387	.....	13	IX	D.	16
Friday...	2388	Saturday....	14	XX	C. B.	17
Sunday...	2389	.....	15	I	A.	18
Monday...	2390	.....	16	XII	G.	19
Tuesday...	2391	.....	17	XXIII	F.	20
Wednesday...	2392	Thursday...	18	IV	E. D.	21

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Friday.. . . .	2393	.....	19	XV	C.	23
Saturday....	2394	.....	1	XXVII	B.	23
Sunday.....	2395	.....	2	VIII	A.	24
Monday.....	2396	Tuesday ...	3	XIX	G. F.	25
Wednesday..	2397	.....	4	*	E.	26
Thursday....	2398	.....	5	XI	D.	27
Friday.....	2399	.....	6	XXII	C.	28
Saturday....	2400	Sunday....	7	IV	B. A.	1
Monday.....	2401	.....	8	XV	G.	2
Tuesday....	2402	.....	9	XXVI	F.	3
Wednesday..	2403	.....	10	VII	E.	4
Thursday....	2404	Friday	11	XVIII	D. C.	5
Saturday....	2405	.....	12	XXIX	B.	6
Sunday.....	2406	.....	13	X	A.	7
Monday.....	2407	.....	14	XXI	G.	8
Tuesday....	2408	Wednesday..	15	II	F. E.	9
Thursday....	2409	.....	16	XIII	D.	10
Friday.....	2410	.....	17	XXIV	C.	11
Saturday....	2411	.....	18	V	B.	12
Sunday.....	2412	Monday	19	XVI	A. G.	13
Tuesday....	2413	.....	1	XXVIII	F.	14
Wednesday..	2414	.....	2	IX	E.	15
Thursday....	2415	.....	3	XX	D.	16
Friday.....	2416	Saturday....	4	I	C. B.	17
Sunday.....	2417	.....	5	XII	A.	18
Monday.....	2418	.....	6	XXIII	G.	19
Tuesday....	2419	.....	7	IV	F.	20
Wednesday..	2420	Thursday ...	8	XV	E. D.	21
Friday.....	2421	.....	9	XXVI	C.	22
Saturday....	2422	.....	10	VII	B.	23
Sunday.....	2423	.....	11	XVIII	A.	24
Monday.....	2424	Tuesday	12	XXIX	G. F.	25
Wednesday..	2425	.....	13	X	E.	26
Thursday....	2426	.....	14	XXI	D.	27
Friday.....	2427	.....	15	II	C.	28
Saturday....	2428	Sunday.	16	XIII	B. A.	1
Monday.....	2429	.....	17	XXIV	G.	2
Tuesday....	2430	.....	18	V	F.	3
Wednesday..	2431	.....	19	XVI	E.	4
Thursday....	2432	Friday.....	1	XXVIII	D. C.	5
Saturday....	2433	.....	2	IX	B.	6
Sunday.....	2434	.....	3	XX	A.	7
Monday.....	2435	.....	4	I	G.	8
Tuesday....	2436	Wednesday .	5	XII	F. E.	9
Thursday....	2437	.....	6	XXIII	D.	10
Friday.....	2438	.....	7	IV	C.	11
Saturday....	2439	.....	8	XV	B.	12

Tables - (Continued).

BEGINN.	A. D.	ENDS.	G. N.	Epacta.	D. L.	S. C.
Sunday.....	2440	Monday.....	9	XXVI	A. G.	13
Tuesday....	2441	.....	10	VII	F.	14
Wednesday..	2442	.....	11	XVIII	E.	15
Thursday....	2443	.....	12	XXIX	D.	16
Friday.....	2444	Saturday....	13	X	C. B.	17
Sunday.....	2445	.....	14	XXI	A.	18
Monday.....	2446	.....	15	II	G.	19
Tuesday....	2447	.....	16	XIII	F.	20
Wednesday..	2448	Thursday....	17	XXIV	E. D.	21
Friday.....	2449	.....	18	V	C.	22
Saturday....	2450	.....	19	XVI	B.	23
Sunday.....	2451	.....	1	XXVIII	A.	24
Monday.....	2452	Tuesday....	2	IX	G. F.	25
Wednesday..	2453	.....	3	XX	E.	26
Thursday....	2454	.....	4	I	D.	27
Friday.....	2455	.....	5	XII	C.	28
Saturday....	2456	Sunday.....	6	XXIII	B. A.	1
Monday.....	2457	.....	7	IV	G.	2
Tuesday....	2458	.....	8	XV	F.	3
Wednesday..	2459	.....	9	XXVI	E.	4
Thursday....	2460	Friday.....	10	VII	D. C.	5
Saturday....	2461	.....	11	XVIII	B.	6
Sunday.....	2462	.....	12	XXIX	A.	7
Monday.....	2463	.....	13	X	G.	8
Tuesday....	2464	Wednesday..	14	XXI	F. E.	9
Thursday....	2465	.....	15	II	D.	10
Friday.....	2466	.....	16	XIII	C.	11
Saturday....	2467	.....	17	XXIV	B.	12
Sunday.....	2468	Monday.....	18	V	A. G.	13
Tuesday....	2469	.....	19	XVI	F.	14
Wednesday..	2470	.....	1	XXVIII	E.	15
Thursday....	2471	.....	2	IX	D.	16
Friday.....	2472	Saturday....	3	XX	C. B.	17
Sunday.....	2473	.....	4	I	A.	18
Monday.....	2474	.....	5	XII	G.	19
Tuesday....	2475	.....	6	XXIII	F.	20
Wednesday..	2476	Thursday....	7	IV	E. D.	21
Friday.....	2477	.....	8	XV	C.	22
Saturday....	2478	.....	9	XXVI	B.	23
Sunday.....	2479	.....	10	VII	A.	24
Monday.....	2480	Tuesday....	11	XVIII	G. F.	25
Wednesday..	2481	.....	12	XXIX	E.	26
Thursday....	2482	.....	13	X	D.	27
Friday.....	2483	.....	14	XXI	C.	28
Saturday....	2484	Sunday.....	15	II	B. A.	1
Monday.....	2485	.....	16	XIII	G.	2
Tuesday....	2486	.....	17	XXIV	F.	3

Tables—(Continued).

BEGINS.	A. D.	ENDS.	G. N.	Epacts.	D. L.	S. C.
Wednesday .	2487	.....	18	V	E.	4
Thursday...	2488	Friday.. ...	19	XVI	D. C.	5
Saturday....	2489	.....	1	XXVIII	B.	6
Sunday.....	2490	.....	2	IX	A.	7
Monday.....	2491	.....	3	XX	G.	8
Tuesday....	2492	Wednesday .	4	I	F. E.	9
Thursday...	2493	.....	5	XII	D.	10
Friday.....	2494	.....	6	XXIII	C.	11
Saturday....	2495	.....	7	IV	B.	12
Sunday.....	2496	Monday.....	8	XV	A. G.	13
Tuesday....	2497	.....	9	XXVI	F.	14
Wednesday .	2498	.....	10	VII	E.	15
Thursday ..	2499	.....	11	XVIII	D.	16
Friday.. ...	2500	.....	12	XXVIII	C.	17

PART FOURTH

GENERAL INFORMATION AND USEFUL RECEIPTS COM- PILED FROM MOST RELIABLE SOURCES OR AUTHORITIES.

Parliamentary Rules and Usages.

The following are the complete rules, in a plain and compact form, for conducting a public meeting:

QUORUM.—A quorum is a sufficient number of the members of an association to legally transact business. Unless a quorum is present no business is in order, except to adjourn. A majority of the members constitutes a natural quorum, but the by-laws of the association may prescribe a smaller number.

THE CHAIRMAN.—It is the duty of the chairman to open the meeting at the time fixed upon, by taking the chair, calling the house to order, to announce the business before the house in the order in which it is to be acted upon; to receive and submit all motions; to put to vote all questions which are regularly moved, or which necessarily arise in the course of proceedings, and to announce the result; to restrain every one, when engaged in debate, within the rules of order; to enforce the observance of order and decorum; to appoint committees; to authenticate by his signature, when necessary, all the acts and proceedings of the house, and generally to declare its will.

He may speak to points of order in preference to others; shall decide all questions of order, and if the house is evenly divided he may give the casting vote, in doing which he may, if he pleases, give his reasons.

THE CLERK.—It is the duty of the clerk or secretary to keep correct minutes of the proceedings of the house; to read all papers when ordered, and for this purpose he should always rise; to call the roll, and state the answer when a vote is taken by yeas and nays; to have the custody of all papers and documents, and to authenticate the acts and proceedings of the house by his signature.

COMMITTEES.—Standing committees sit permanently; special committees perform only some particular duty, when they are discharged. The person first-named is usually regarded as chairman, but this is only a matter of courtesy; every committee has a right to select its own chairman. Custom, however, has practically taken away this right, and it is considered bad form to elect any other person than the first-named as chairman. The mover of a motion to commit, should be placed on the committee and first-named, except where the matter committed concerns him personally. In the appointment of the committee no person directly opposed to the measure committed should be named, and when any person who is thus opposed to same, hears himself named of its committee he should ask to be excused.

The chair appoints all committees. Committees do not adjourn, but, when they have concluded their deliberations, should rise and report. The report should be presented by the chairman. When the report is received the committee is dissolved and cannot act further without new power.

Any committee required or entitled to report upon a subject referred to them may make a majority and minority report, while any member of such committee dissenting in whole or in part, from either the conclusion or the reasoning of both the majority and minority, may also present a statement of his reasons for such dissent, which should be received in connection with the reports.

The committee of the whole is an expedient to simplify the business of legislative bodies. No record is made of its proceedings. The presiding officer puts the question, and, if same is carried, appoints some person as chairman and then vacates the chair.

MOTIONS.—Propositions made to a deliberative assembly are called *motions*; when the proposition is put to vote it is called the *question*. A motion cannot be entertained or the question put, until the same has been seconded. After this it becomes the property of the house, and cannot be withdrawn except by leave. It must be in writing whenever the house or presiding officer require it, and must be read when any person demands it for information.

An exception to the rule requiring a second to a motion is made in cases when the proposition is to proceed with or to execute an order of the house; as where it is moved to proceed with an order of the day, or where a call is made for the enforcement of some order relating to the observance of decorum.

No motion can be made while a speaker has the floor, nor while another motion is pending, except it be a question of privilege.

AMENDMENTS.—A motion may be amended by inserting or adding words, or by striking out words, or by striking out and

inserting words. An amendment takes precedence of the original question and must be first decided. So, too, an amendment to an amendment must be decided before the amendment. A motion may be made to amend, after which a motion will be to amend the amendment, but this is the full limit of the rule by which one motion may be put upon another. A motion to amend the second amendment is not in order.

Questions of privilege can not be amended, except that a motion to postpone can be amended as to time.

THE QUESTION.—The question is first to be put on the affirmative and then on the negative side, the vote in most cases being by oral response. If there are doubts as to the voice of the majority, any one may call for a division. In all cases where the house is equally divided the question is lost, unless the presiding officer affirms it by a casting vote.

When a division is had, those in the affirmative on the question should first rise and be counted, or, if there still be a doubt, or a count be called for, the chairman should appoint two tellers, one from each side, to make the count and report the same to the chairman, who should then declare the same to the house.

In small matters of routine business or trifling importance, such as receiving reports, withdrawing motions, etc., the presiding officer may suppose the consent of the house where no objection is expressed, and need not give them the trouble of putting the question formally.

A question, should always be stated by the chair before it is put, after which it is open to debate. Questions may be stated by the chair while sitting, but he should always rise to put a question, and should use substantially this form: "As many as are of the opinion that (as the question may be) will say aye;" and, after the affirmative voice is expressed, "As many as are of a contrary opinion, will say no."

After a question has been put it is not debatable, but after the affirmative is put any person who has not spoken before to the question may rise and speak before the negative is put.

DIVISION OF QUESTION.—Any person may call for the division of a question if it comprehend propositions, in substance so distinct, that, one being taken away, a substantive proposition shall remain for decision.

When a question is divided, after the question on the first part, the second is open to debate and amendment.

PRIVILEGED QUESTIONS.—When a question is under debate, no motion shall be received, except to adjourn; to lay on the table; for the previous question; to postpone to a day certain; to commit; to amend; to postpone indefinitely. These motions have precedence in the order in which they stand arranged, and are called privileged questions.

A motion to adjourn is always in order and takes precedence of all other motions, and an order of the day takes the place of all questions except adjournment.

When a matter has been laid on the table it may be taken up at any time afterward and considered, but not at the same meeting or session at which it was tabled. Frequently this motion is made to finally dispose of the matter, and it always has this effect when no motion is afterward made to take it up. The proper motion for proceeding with a matter that has been ordered to lie on the table, is, that the house do now proceed to consider that matter, although it would be proper to move that the matter be taken up for consideration.

There are several questions which, being incidental to every one, will take the place of every one, privileged or not; as, a question of order arising out of any other question must be decided before that question.

A motion for indefinite postponement is generally resorted to in order to suppress a question or prevent its coming to vote.

PREVIOUS QUESTION.—When any question is before the house any member may move that the question (called the main question) be now put, or, as it is usually termed, may move the previous question. If it pass in the affirmative, then the main question is to be put immediately, and no further debate is permitted.

The previous question being moved and seconded, the question from the chair should be, "Shall the main question be now put?" If the nays prevail the main question remains as the question before the house, in the same stage of proceedings as before the previous question was moved.

EQUIVALENT QUESTIONS.—Where questions are perfectly equivalent, so that the negative of the one amounts to the affirmative of the other, and leaves no other alternative, the decision of the one necessarily concludes the other. Thus the negative of striking out amounts to the affirmative of agreeing; and, therefore, to put a question on agreeing after that of striking out, would be to put the same question in effect twice over.

QUESTIONS OF ORDER.—It is the duty of the chairman to decide all questions of order whenever raised. Upon such questions no debate or discussion is in order, but if the decision is not satisfactory any one may object to it and appeal to the house. On appeal being taken, the question should be: "Shall the decision of the chair stand as the judgment of the house?" Whereupon the question may be debated and discussed the same as any other question.

COMMITMENT.—Any measure may be referred to a committee, on motion. This motion stands in the same degree with the previous question and postponement, and, if first made, takes precedence of them. A motion to commit may be amended by the substitution of one kind of committee for another, or by enlarging or diminishing the number of the members of the committee, as originally proposed, or by instructions to the committee.

After a measure has been committed and reported, it should not, in an ordinary course, be recommitted, but in cases of importance, and for special reasons, it is sometimes recommitted, and usually to the same committee.

RECONSIDERATION.—When a motion or question shall have been determined, either in the affirmative or negative, it is always in order for any one who voted with the majority, or in case the vote was equally divided, for one who voted in the negative, to move for a reconsideration thereof. Such motion must be made at the same meeting at which the former vote was taken. A motion to reconsider, being put and lost, can not be renewed.

UNDEBATABLE MOTIONS.—A motion to adjourn; to lay on the table, and a call for the previous question, must be decided without debate. And all incidental questions of order, arising after a motion is made for either of the foregoing questions, must be decided, whether on appeal or otherwise, without debate.

ORDER IN DEBATE.—When a person means to speak, he is to stand up in his place, uncovered, and address himself to the chair, who calls him by name, that all may take notice who it is that speaks. A person who is indisposed may be indulged to speak sitting.

When a person rises to speak, no question is to be put, but he is to be heard undisturbed, unless overruled.

If two or more rise to speak nearly together, the chair determines who was first up and calls him by name, whereupon he proceeds, unless he voluntarily sits down and yields the floor to the other.

No one may speak more than twice to the same question without the consent of the house, except merely to explain himself in some material part of his speech, or to the manner of the words in question, keeping himself to that only and not going into the merits of it.

If the chairman rises to speak, the person standing must sit down, that the chair may be first heard.

No one is to speak impertinently, or beside the question, or to use indecent language against the proceedings of the house. Nor should a person in speaking, mention another then present, by his name, but should describe him by his seat, or as "the gentleman who spoke last," or, "on the other side of the question," etc.

Any one when called to order by another or by the chair, must sit down, and not proceed without leave until the question of order shall have been decided by the chair.

While the presiding officer is addressing the house or putting a question, no one should cross the floor or leave the room; nor while another is speaking, walk between him and the chair.

ADJOURNMENT.—A motion to adjourn is not susceptible of amendment. If it is desired to adjourn to any particular place

or time, this may be accomplished by a previous resolution to that effect.

Industries of the States.

- Alabama ranks fourth in cotton.
- Arizona ranks second in silver.
- California ranks first in barley, grape culture, sheep, gold and quicksilver.
- Colorado ranks first in silver.
- Connecticut ranks first in clocks.
- Delaware is way up in peaches.
- Dakota is the finest wheat-growing state.
- Florida ranks third in sugar and molasses.
- Georgia ranks second in rice and sweet potatoes.
- Indiana ranks second in wheat.
- Illinois ranks first in oats, meat packing, lumber traffic, malt and distilled liquors, and miles of railway.
- Iowa ranks first in average intelligence of population, first in production of corn, and first in number of swine.
- Idaho ranks sixth in gold and silver.
- Kansas ranks fifth in cattle, corn and rye.
- Kentucky ranks first in tobacco and has a world-wide reputation for thoroughbred horses and cattle.
- Louisiana ranks first in sugar and molasses.
- Maine ranks first in ship building, slate and granite quarries, lumbering and fishing.
- Maryland ranks fourth in coal.
- Massachusetts ranks first in cotton, woolen and worsted goods, and in cod and mackerel fisheries.
- Michigan ranks first in copper, lumber and salt.
- Minnesota ranks fourth in wheat and barley.
- Mississippi ranks second in cotton.
- Missouri ranks first in mules.
- Montana ranks fifth in silver and gold.
- New Mexico's grazing facilities can't be beat.
- Nebraska has abundant crops of rye, buckwheat, barley, flax and hemp.
- Nevada ranks second in gold.
- New Hampshire ranks third in the manufacture of cotton goods.
- New Jersey ranks first in fertilizing marl, zinc, and silk goods.
- New York ranks first in the value of manufactures, soap, printing and publishing, hops, hay, potatoes, buckwheat, and milk cows.
- North Carolina ranks first in tar and turpentine.
- Ohio ranks first in agricultural implements and wool.
- Oregon takes the palm for cattle raising.

Pennsylvania ranks first in rye, iron, steel, petroleum, and coal.

Rhode Island, in proportion to its size, outranks all other states in value of manufactures.

South Carolina ranks first in phosphates.

Tennessee ranks second in peanuts.

Texas ranks second in cattle and cotton.

Utah ranks third in silver.

Vermont ranks fourth in copper.

Virginia ranks first in peanuts.

West Virginia ranks fifth in salt and coal.

Wisconsin ranks second in hops.

Legal Holidays in the Various States.

January 1. New Year's Day: in Alabama, California, Colorado, Connecticut, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Jersey, New York, Ohio, Pennsylvania, South Carolina, Tennessee, Texas, Vermont, Virginia, West Virginia, and Wisconsin.

January 8. Anniversary of the Battle of New Orleans: in Louisiana.

February 22. Washington's Birthday: in California, Colorado, Connecticut, Florida, Georgia, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, South Carolina, Texas, Virginia, West Virginia, and Wisconsin.

March 2. Anniversary of Texan Independence: in Texas.

March 4. Fireman's Anniversary: in New Orleans, La.

Mardi-Gras: in Louisiana, and the cities of Mobile, Montgomery and Selma, Ala.

April 21. Anniversary of the Battle of San Jacinto: in Texas.

Good Friday: in Louisiana, Maryland, Minnesota, and Pennsylvania.

April 26. Memorial Day: in Georgia.

May 30. Decoration Day: in California, Colorado, Connecticut, Iowa, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont.

July 4. Independence Day: in all the States.

General Election Day: in California, Florida, Maryland, Missouri, New Jersey, New York, South Carolina, Texas and Wisconsin.

Thanksgiving Day: in all the States.

December 25. Christmas Day: in all the States.

Sundays and Fast Days (whenever appointed) are legal holidays in all the States.

Stock Brokers' Technicalities.

A *Bull* is one who operates to depress the value of stocks, that he may buy for a rise.

A *Bear* is one who sells stocks for future delivery, which he does not own at the time of sale.

A *Corner* is when the Bears cannot buy or borrow the stock to deliver in fulfillment of their contracts.

Overloaded is when the Bulls cannot take and pay for the stock they have purchased.

Short is when a person or party sells stocks when they have none, and expect to buy or borrow in time to deliver.

Long is when a person or party has a plentiful supply of stocks.

A *Pool* or *Ring* is a combination formed to control prices.

A *Broker* is said to Carry stocks for his customer when he has bought and is holding it for his account.

A *Wash* is a pretended sale by special agreement between buyer and seller, for the purpose of getting a quotation reported.

A *Put* and *Call* is when a person gives so much per cent, for the option of buying or selling so much stock on a certain day, at a price fixed the day the option is given.

The Use of Capitals.

1. Every entire sentence should begin with a capital.
2. Proper names, and adjectives derived from these, should begin with a capital.
3. AH appellations of the Deity should begin with a capital.
4. Official and honorary titles begin with a capital.
5. Every line of poetry should begin with a capital.
6. Titles of books and the heads of their chapters and divisions are printed in capitals.
7. The pronoun I and the exclamation O are always capitals.
8. The days of the week and the months of the year begin with capitals.
9. Every quotation should begin with a capital letter.
10. Names of religious denominations begin with capitals.
11. In preparing accounts, each item should begin with a capital.
12. Any word of very special importance may begin with a capital.

Naturalization Laws of the United States.

The conditions under and the manner in which an alien may be admitted to become a citizen of the United States are prescribed by sections 2165-74 of the Revised Statutes of the United States.

DECLARATION OF INTENTION.

The alien must declare upon oath, before a circuit or district court of the United States, or a district or supreme court of the Territories, or a court of record of any of the states having common law jurisdiction, and a seal and clerk, two years at least prior to his admission, that it is, *bona-fide*, his intention to become a citizen of the United States, and to renounce forever all allegiance and fidelity to any foreign prince or State, and particularly the one of which he may be at the time a citizen or subject.

OATH ON APPLICATION FOR ADMISSION.

He must, at the time of his application to be admitted, declare on oath, before some one of the courts above specified, "that he will support the Constitution of the United States and that he absolutely and entirely renounces and abjures all allegiance and fidelity to every foreign prince, potentate, State or sovereignty, and particularly, by name, to the prince, potentate, State or sovereignty of which he was before a citizen or subject," which proceedings must be recorded by the clerk of the court.

CONDITIONS FOR CITIZENSHIP.

If it shall appear to the satisfaction of the court to which the alien has applied that he has resided continuously within the United States for at least five years, and within the state or territory where such court is at the time held one year at least; and that during that time "he has behaved as a man of good moral character, attached to the principles of the Constitution of the United States, and well disposed to the good order and happiness of the same," he will be admitted to citizenship.

TITLES OF NOBILITY.

If the applicant has borne any hereditary title or order of nobility, he must make an express renunciation of the same at the time of his application.

SOLDIERS.

Any alien of the age of twenty-one years and upward, who has been in the armies of the United States and has been honorably discharged therefrom, may become a citizen on his petition, without any previous declaration of intention, provided that he has resided in the United States at least one year previous to his application, and is of good moral character.

MINORS.

Any alien under the age of twenty-one years who has resided in the United States three years next preceding his arriving at that age, and who has continued to reside therein to the time he may make application to be admitted a citizen thereof, may, after he arrives at the age of twenty-one years, and after he has resided five years within the United States, including the three years of his minority, be admitted a citizen; but he must make a declaration on oath and prove to the satisfaction of the court that for two years next preceding it has been his *bona-fide* intention to become a citizen.

CHILDREN OF NATURALIZED CITIZENS.

The children of persons who have been duly naturalized, being under the age of twenty-one years at the time of the naturalization of their parents, shall, if dwelling in the United States, be considered as citizens thereof.

CITIZENS' CHILDREN WHO ARE BORN ABROAD.

The children of persons who now are or have been citizens of the United States are, though born out of the limits and jurisdiction of the United States, considered as citizens thereof.

PROTECTION ABROAD TO NATURALIZED CITIZENS.

Section 2000 of the Revised Statutes of the United States declares that "all naturalized citizens of the United States while in foreign countries are entitled to and shall receive from this government the same protection of persons and property which is accorded to native born citizens."

Interest Rules.

Interest Rules.—For finding the interest on any principal for any number of days: The answer in each case being in cents, separate the two right-hand figures of answer to express in dollars and cents.

Four per cent.: Multiply the principal by the number of days to run; separate right-hand figure from product, and divide by 9.

Five per cent.: Multiply by number of days and divide by 72.

Six per cent.: Multiply by number of days, separate right-hand figure, and divide by 6.

Eight per cent.: Multiply by number of days and divide by 45.

Nine per cent.: Multiply by number of days, separate right-hand figure, and divide by 4.

Ten per cent.: Multiply by number of days and divide by 36.

Twelve per cent.: Multiply by number of days separate right-hand figure, and divide by 3.

Fifteen per cent.: Multiply by number of days and divide by 24.

Eighteen per cent.: Multiply by number of days, separate right-hand figure, and divide by 2.

Twenty per cent.: Multiply by number of days and divide by 18.

Twenty-four per cent.: Multiply by number of days and divide by 15.

Language of Flowers.

FLOWERS.	SENTIMENTS.
Acacia.....	Concealed love.
Almond.....	Hope.
Apple-blossom.....	Preference.
Arbutus, trailing.....	Welcome.
Bell flower.....	Gratitude.
Box.....	Constancy.
Calla lily.....	Feminine beauty.
Cedar.....	I live for thee.
China aster.....	I will think of it.
Chrysanthemum, rose.....	I love.
Clover, red.....	Industry.
Corn.....	Riches.
Cowslip, American.....	You are my divinity.
Daffodil.....	Chivalry.
Dahlia.....	Forever thine.
Daisy, garden.....	I partake your sentiments.
Daisy, white.....	Innocence.
Daisy, wild.....	I will think of it.
Elm, American.....	Patriotism.
Forget-me-not.....	True love.
Fuchsia, scarlet.....	Taste.
Geranium, apple.....	Present preference.
Geranium, ivy.....	Your hand for the next dance.
Geranium, rose.....	Preference.
Gillyflower.....	Lasting beauty.
Golden rod.....	Encouragement.
Hawthorn.....	Hope.
Heliotrope, Peruvian.....	I love you; devotion.
Honeysuckle.....	Bond of love.
Horse-Chestnut.....	Luxury.
Hyacinth.....	Jealousy.
Mint.....	Virtue.
Morning glory.....	Coquetry.
Myrtle.....	Love.
Oats.....	Music.
Orange.....	Generosity.
Pansy.....	Think of me.
Pink.....	Pure affection.
Pink, red.....	Pure, ardent love.
Rose, moss.....	Superior merit.
Rose, tea.....	Always lovely.
Rose, white.....	I am worthy of you.
Snowball.....	Winter.
Tuberose.....	Dangerous pleasures.
Verbena.....	Sensibility.
Violet, blue.....	Love.
Violet, white.....	Modesty.

Worth Knowing About the Silver Question.

Mint Director Preston has made the following simple and comprehensive statement in regard to the coinage ratio between gold and silver in response to frequent inquiries on that point:

All standard silver dollars coined by the mints of the United States since the passage of the act of January 18, 1837, have been coined in the ratio of 1 to 15,9884, generally called the ratio of 1 to 16—15,9884 being very nearly 16. Still to reach accurate results, the former and not the latter figure must be used in calculation. The ratio is obtained in this way:

The silver dollar contains 371.25 grains of pure silver. If you divide 371.25 by 23.22 you will get the ratio of weight between a gold dollar and a silver dollar—that is 15.9884. It is true that to be on a par with gold, silver would (at our ratio) be worth \$1.2928. The reason is that a gold dollar contains 23.22 grains of pure gold. In an ounce, or 480 grains of gold, there are as many dollars as 23.22 is contained times in 480, or one ounce. If you divide 480 by 23.22 you get \$20.67 the number of dollars that can be coined out of an ounce of pure gold; in other words, the money equivalent of one ounce of gold or of 15.9884 ounces of silver at the ratio of 1 to 15.9884. Now, if 15.9884 ounces of silver be worth \$20.67, one ounce will be worth \$1.2928, as you can prove by simple division. The same result is obtained by dividing 480 grains or one ounce of silver by 371.25, the number of grains of pure silver in a standard silver dollar, at the ratio of 1 to 15.9884, which gives \$1.2929.

Sixteen ounces of pure silver will coin a little more than one ounce of gold; 15.9884 ounces of silver will coin exactly the same amount of money as one ounce of gold—that is, \$20.67. You can prove this by dividing 15.9884 ounces by 271.25 grains. The operation is as follows: 15.9884, multiplied by 480 divided by 371.25 equals 20.67.

It is not true that sixteen ounces of silver will coin only \$16.80 at the ratio of 1 to 16.

As will be seen above, one ounce of silver will coin \$1.2929. Multiplying \$1.2929 by 16 gives \$20.68. You can make the same result in another way: 16 ounces troy, or 7680 grains, divided by 371.25, gives the number of silver dollars that can be coined out of 16 ounces of silver: 7680, divided by 371.25, equal 20.68.

The Seven Wonders of the World.

The Egyptian Pyramids; the Mausoleum, erected by Artemisia, the Temple of Diana at Ephesus; the Walls and Hanging Gardens of Babylon; the Colossus of Rhodes; the Statue of Jupiter Olympus; and the Watch-tower at Alexandria.

DECLARATION OF INDEPENDENCE.*

IN CONGRESS, JULY 4, 1776.

THE UNANIMOUS DECLARATION OF THE THIRTEEN UNITED STATES
OF AMERICA.

When, in the course of human events, it becomes necessary for one people to dissolve the political bands which have connected them with another, and to assume, among the powers of the earth, the separate and equal station to which the laws of nature and of nature's God entitles them a decent respect to the opinions of mankind requires that they should declare the causes which impel them to the separation.

We hold these truths to be self-evident, that all men are created equal, that they are endowed, by their Creator, with certain unalienable rights, that among these are life, liberty, and the pursuit of happiness. That to secure these rights, governments are instituted among men, deriving their just powers from the consent of the governed, that whenever any form of government becomes destructive of these ends, it is the right of the people to alter or to abolish it, and to institute new government, laying its foundation on such principles and organizing its powers in such form as to them shall seem most likely to effect their safety and happiness. Prudence, indeed, will dictate, that governments long established, should not be changed for light and transient causes; and accordingly all experience hath shown, that mankind are more disposed to suffer, while evils are sufferable, than to right themselves by abolishing the forms to which they are accustomed. But when a long train of abuses and usurpations, pursuing invariably the same object, evinces a design to reduce them under absolute despotism, it is their right, it is their duty, to throw off such government, and to provide new guards for their future security. Such has been the patient sufferance of these Colonies, and such is now the necessity which constrains them to alter their former systems of government. The history of the present king of Great Britain is a history of repeated injuries and usurpations, all having in direct object the establishment of an absolute tyranny over these states. To prove this, let facts be submitted to a candid world.

He has refused his assent to laws, the most wholesome and necessary for the public good.

He has forbidden his governors to pass laws of immediate and pressing importance, unless suspended in their operation

* From an authenticated copy remaining in the office of the Secretary of State.

till his assent should be obtained; and when so suspended, he has utterly neglected to attend to them.

He has refused to pass other laws for the accommodation of large districts of people, unless those people would relinquish the right of representation in the legislature, a right inestimable to them, and formidable to tyrants only.

He has called together legislative bodies at places unusual, uncomfortable, and distant from the depository of their public records, for the sole purpose of fatiguing them into compliance with his measures.

He has dissolved representative houses repeatedly, for opposing with manly firmness his invasions on the rights of the people.

He has refused for a long time, after such dissolutions, to cause others to be elected; whereby the legislative powers, incapable of annihilation, have returned to the people at large for their exercise; the state remaining, in the meantime, exposed to all the dangers of invasion from without, and convulsions within.

He has endeavored to prevent the population of these states; for that purpose obstructing the laws for naturalization of foreigners; refusing to pass others to encourage their migrations hither, and raising the condition of new appropriations of lands.

He has obstructed the administration of justice by refusing his assent to laws for establishing judiciary powers.

He has made judges dependent on his will alone, for the tenure of their offices, and the amount and payment of their salaries.

He has erected a multitude of new offices, and sent hither swarms of officers to harrass our people, and eat out their substance.

He has kept among us, in times of peace, standing armies, without the consent of our legislatures.

He has affected to render the military independent of and superior to the civil power.

He has combined with others to subject us to a jurisdiction foreign to our constitution, and unacknowledged by our laws; giving his assent to their acts of pretended legislation:

For quartering large bodies of armed troops among us;

For protecting them, by a mock trial, from punishment for any murders which they should commit on the inhabitants of these states;

For cutting off our trade with all parts of the world;

For imposing taxes on us without our consent;

For depriving us, in many cases, of the benefits of trial by jury;

For transporting us beyond seas to be tried for pretended offenses;

For abolishing the free system of English laws in a neighboring province, establishing therein an arbitrary govern-

ment, and enlarging its boundaries, so as to render it at once an example and fit instrument for introducing the same absolute rule into these colonies;

For taking away our charters, abolishing our most valuable laws, and altering fundamentally the forms of our governments;

For suspending our own legislatures, and declaring themselves invested with power to legislate for us in all cases whatsoever.

He has abdicated government here, by declaring us out of his protection, and waging war against us.

He has plundered our seas, ravaged our coasts, burnt our towns, and destroyed the lives of our people.

He is, at this time, transporting large armies of foreign mercenaries to complete the works of death, desolation, and tyranny, already begun, with circumstances of cruelty and perfidy, scarcely paralleled in the most barbarous ages, and totally unworthy the head of a civilized nation.

He has constrained our fellow-citizens, taken captive on the high seas, to bear arms against their country, to become the executioners of their friends and brethren, or to fall themselves by their hands.

He has excited domestic insurrections amongst us, and has endeavored to bring on the inhabitants of our frontiers, the merciless Indian savages, whose known rule of warfare is an undistinguished destruction of all ages, sexes and conditions.

In every stage of these oppressions we have petitioned for redress in the most humble terms; our repeated petitions have been answered only by repeated injury. A prince whose character is thus marked by every act which may define a tyrant, is unfit to be the ruler of a free people.

Nor have we been wanting in attentions to our British brethren. We have warned them, from time to time, of attempts by their legislature to extend an unwarrantable jurisdiction over us. We have reminded them of the circumstances of our emigration and settlement here. We have appealed to their native justice and magnanimity, and we have conjured them by the ties of our common kindred to disavow these usurpations, which would inevitably interrupt our connexions and correspondence. They too have been deaf to the voice of justice and of consanguinity. We must, therefore, acquiesce in the necessity which denounces our separation, and hold them, as we hold the rest of mankind, enemies in war, in peace friends.

We, therefore, the Representatives of the United States of America, in General Congress assembled, appealing to the Supreme Judge of the world for the rectitude of our intentions, do, in the name, and by authority of the good people of these Colonies, solemnly publish and declare, That these United Colonies are, and of right ought to be, *free and independent States*; that they are absolved from all allegiance to the British crown, and that all political connexion between them and the State of Great Britain, is, and ought to be, totally dissolved; and that as *free and independent States*, they have full power to levy war, conclude peace, contract alliances, establish commerce, and to do all other acts and things which *independent States* may of

right do. And for the support of this declaration, with a firm reliance on the protection of Divine Providence, we mutually pledge to each other our lives, our fortunes, and our sacred honour.

JOHN HANCOCK.

Georgia.

Button Gwinnett.
Lyman Hall.
Geo. Walton.

North Carolina.

Wm. Hooper.
Joseph Hewes.
John Penn.

South Carolina.

Edward Rutledge.
Thos. Heyward, junr.
Thomas Lynch, junr.
Arthur Middleton.

Maryland.

Samuel Chase.
Wm. Paca.
Thos. Stone.
Charles Carroll of Carrollton.

Virginia.

George Wythe.
Richard Henry Lee.
Thos. Jefferson.
Benja. Harrison.
Thos. Nelson, Jr.
Francis Lightfoot Lee.
Carter Braxton.

Pennsylvania.

Robt. Morris.
Benjamin Rush.
Benja. Franklin.
John Morton.
Geo. Clymer.
Jas. Smith.
Geo. Taylor.
James Wilson.
Geo. Ross.

Delaware.

Cæsar Rodney.
Geo. Read.

New York.

Wm. Floyd.
Phil. Livingston.
Fran's. Lewis.
Lewis Morris.

New Jersey.

Richd. Stockton.
Jno. Witherspoon.
Fras. Hopkinson.
John Hart.
Abra. Clark.

New Hampshire.

Josiah Bartlett.
Wm. Whipple.
Matthew Thornton.

Massachusetts Bay.

Saml. Adams.
John Adams.
Robt. Treat Paine.
Elbridge Gerry.

Rhode Island and Providence, &c.

Step. Hopkins.
William Ellery.

Connecticut.

Roger Sherman.
Saml. Huntington.

Wm. Williams.
Oliver Wolcott.

Ordered: IN CONGRESS,
JANUARY, 18, 1777. }

That an authenticated copy of the Declaration of Independency, with the names of the Members of Congress subscribing the same, be sent to each of the United States, and that they be desired to have the same put on record.

By order of Congress.

JOHN HANCOCK,
President.

Attest, CHAS. THOMSON,
Secy.

A true copy.
JOHN HANCOCK,
Presidt.

Constitution of the United States.

ARTICLE I.

SECTION 1. Legislative powers; in whom vested.

SEC. 2. House of Representatives, how and by whom chosen — Qualifications of a Representative — Representatives and direct taxes, how apportioned — Census — Vacancies to be filled — Power of choosing officers, and of impeachment.

SEC. 3. Senators, how and by whom chosen — How classified — State Executive to make temporary appointments, in case, etc. — Qualifications of a Senator — President of the Senate, his right to vote — President *pro tem.*, and other officers of Senate, how chosen — Power to try impeachments — When President is tried, Chief Justice to preside — Sentence.

SEC. 4. Times, etc., of holding elections, how prescribed — One Session in each year.

SEC. 5. Membership — Quorum — Adjournments — Rules — Power to punish or expel — Journal — Time of adjournments limited, unless, etc.

SEC. 6. Compensation — Privileges — Disqualification in certain cases.

SEC. 7. House to originate all revenue bills — Veto — Bill may be passed by two-thirds of each house, notwithstanding, etc. — Bill not returned in ten days — Provision as to all orders, etc., except, etc.

SEC. 8. Powers of Congress.

SEC. 9. Provision as to migration or importation of certain persons — *Habeas Corpus* — Bills of attainder, etc. — Taxes, how apportioned — No export duty — No commercial preferences — No money drawn from treasury, unless, etc. — No titular nobility — Officers not to receive presents, unless, etc.

SEC. 10. States prohibited from the exercise of certain powers.

ARTICLE II.

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fication of President—On whom his duties devolve in case of his removal, death, etc.—President's compensation—His oath.

SEC. 2. President to be commander-in-chief—He may require opinion of, etc., and may pardon—Treaty-making power—Nomination of certain officers—When President may fill vacancies.

SEC. 3. President shall communicate to Congress—He may convene and adjourn Congress, in case, etc.; shall receive ambassadors, execute laws, and commission officers.

SEC. 4. All civil offices forfeited for certain crimes.

ARTICLE III.

SECTION 1. Judicial power—Tenure—Compensation.

SEC. 2. Judicial power; to what cases it extends—Original jurisdiction of Supreme Court—Appellate—Trial by jury, except, etc.—Trial, where.

SEC. 3. Treason, defined—Proof of—Punishment of.

ARTICLE IV.

SECTION 1. Each State to give credit to the public acts, etc., of every other State.

SEC. 2. Privileges of citizens of each State—Fugitives from justice to be delivered up—Persons held to service having escaped, to be delivered up.

SEC. 3. Admission of new States—Power of Congress over territory and other property.

SEC. 4. Republican form of government guaranteed—Each State to be protected.

ARTICLE V.

Constitution; how amended—Proviso.

ARTICLE VI.

Certain debts, etc., adopted—Supremacy of Constitution, treaties and laws of the United States—Oath to support Constitution, by whom taken—No religious test.

ARTICLE VII.

What ratification shall establish Constitution.

AMENDMENTS.

I. Religious establishment prohibited—Freedom of speech, of the press, and right to petition.

II. Right to keep and bear arms.

III. No soldier to be quartered in any house, unless, etc.

IV. Right of search and seizure regulated.

V. Provisions concerning prosecution, trial and punishment—Private property not to be taken for public use, without, etc.

VI. Further provision respecting criminal prosecutions.

VII. Right of trial by jury secured.

- VIII. Excessive bail or fines and cruel punishments prohibited.
- IX. Rule of construction.
- X. Same subject.
- XI. Same subject.
- XII. Manner of choosing president and vice-president.
- XIII. Slavery abolished.
- XIV. Citizenship.

WE, the people of the United States, in order to form a more perfect union, establish justice, insure domestic tranquility, provide for the common defense, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this Constitution for the United States of America.

ARTICLE I.

SECTION 1.

1. All legislative powers herein granted, shall be vested in a congress of the United States, which shall consist of a senate and house of representatives.

SECTION 2.

1. The house of representatives shall be composed of members chosen every second year by the people of the several states; and the electors in each state shall have the qualifications requisite for electors of the most numerous branch of the state legislature.

2. No person shall be a representative who shall not have attained to the age of twenty-five years, and been seven years a citizen of the United States, and who shall not, when elected, be an inhabitant of that state in which he shall be chosen.

3. Representatives and direct taxes shall be apportioned among the several states which may be included within this Union, according to their respective numbers, which shall be determined by adding to the whole number of free persons, including those bound to service for a term of years, and excluding Indians not taxed, three-fifths of all other persons. The actual enumeration shall be made within three years after the first meeting of the congress of the United States, and within every subsequent term of ten years, in such manner as they shall by law direct. The number of representatives shall not exceed one for every thirty thousand, but each state shall have at least one representative; and until such enumeration shall be made, the state of New Hampshire shall be entitled to choose three; Massachusetts, eight; Rhode Island and Providence Plantations, one; Connecticut, five; New York, six; New Jersey, four; Pennsylvania, eight; Delaware, one; Maryland, six; Virginia, ten; North Carolina, five; South Carolina, five; and Georgia, three.

4. When vacancies happen in the representation from any state, the executive authority thereof shall issue writs of election to fill such vacancies.

5. The house of representatives shall choose their speaker and other officers, and shall have the sole power of impeachment.

SECTION 3.

1. The senate of the United States shall be composed of two senators from each state, chosen by the legislature thereof, for six years; and each senator shall have one vote.

2. Immediately after they shall be assembled in consequence of the first election, they shall be divided as equally as may be into three classes. The seats of the senators of the first class shall be vacated at the expiration of the second year, of the second class at the expiration of the fourth year, and of the third class at the expiration of the sixth year, so that one-third may be chosen every second year; and if vacancies happen, by resignation or otherwise, during the recess of the legislature of any state, the executive thereof may make temporary appointments until the next meeting of the legislature, which shall then fill such vacancies.

3. No person shall be a senator who shall not have attained the age of thirty years, and been nine years a citizen of the United States, and who shall not, when elected, be an inhabitant of that state for which he shall be chosen.

4. The vice-president of the United States shall be president of the senate, but shall have no vote unless they be equally divided.

5. The senate shall choose their other officers, and also a president *pro tempore* in the absence of the vice-president, or when he shall exercise the office of president of the United States.

6. The senate shall have the sole power to try all impeachments. When sitting for that purpose, they shall be on oath or affirmation. When the president of the United States is tried, the chief justice shall preside; and no person shall be convicted without the concurrence of two-thirds of the members present.

7. Judgment in cases of impeachment shall not extend further than to removal from office, and disqualification to hold and enjoy any office of honor, trust or profit under the United States; but the party convicted shall, nevertheless, be liable and subject to indictment, trial, judgment and punishment, according to law.

SECTION 4.

1. The times, places and manner of holding elections for senators and representatives shall be prescribed in each state by the legislature thereof; but the congress may at any time by law make or alter such regulations, except as to the place of choosing senators.

2. The congress shall assemble at least once in every year; and such meeting shall be on the first Monday in December, unless they shall by law appoint a different day.

SECTION 5.

1. Each house shall be the judge of the elections, returns and qualifications of its own members, and a majority of each shall constitute a quorum to do business; but a smaller number may adjourn from day to day, and may be authorized to compel the attendance of absent members, in such manner and under such penalties as each house may provide.

3. Each house may determine the rule of its proceedings, punish

its members for disorderly behavior, and with the concurrence of two-thirds, expel a member.

3. Each house shall keep a journal of its proceedings, and from time to time publish the same, excepting such parts as may, in their judgment, require secrecy; and the yeas and nays of the members of either house on any question shall, at the desire of one-fifth of those present, be entered on the journal.

4. Neither house, during the session of congress, shall, without the consent of the other, adjourn for more than three days, nor to any other place than that in which the two houses shall be sitting.

SECTION 6.

1. The senators and representatives shall receive a compensation for their services, to be ascertained by law, and paid out of the treasury of the United States. They shall, in all cases except treason, felony and breach of the peace, be privileged from arrest during their attendance at the session of their respective houses, and in going to and returning from the same; and for any speech or debate in either house they shall not be questioned in any other place.

2. No senator or representative shall, during the time for which he was elected, be appointed to any civil office under the authority of the United States, which shall have been created, or the emoluments whereof shall have been increased, during such time; and no person holding any office under the United States shall be a member of either house during his continuance in office.

SECTION 7.

1. All bills for raising revenue shall originate in the house of representatives; but the senate may propose or concur with amendments as on other bills.

2. Every bill which shall have passed the house of representatives and the senate shall, before it becomes a law, be presented to the president of the United States; if he approve, he shall sign it; but if not, he shall return it, with his objections, to that house in which it shall have originated; who shall enter the objections at large on their journal, and proceed to reconsider it. If, after such reconsideration, two-thirds of that house shall agree to pass the bill, it shall be sent, together with the objections, to the other house, by which it shall likewise be reconsidered; and, if approved by two-thirds of that house, it shall become a law. But in all cases, the votes of both houses shall be determined by yeas and nays, and the names of the persons voting for and against the bill shall be entered on the journal of each house respectively. If any bill shall not be returned by the president within ten days (Sundays excepted) after it shall have been presented to him, the same shall be a law in like manner as if he had signed it, unless the congress, by their adjournment, prevent its return, in which case it shall not be a law.

3. Every order, resolution or vote, to which the concurrence of the senate and house of representatives may be necessary (except on a question of adjournment), shall be presented to the president of the United States; and, before the same shall take effect, shall be ap-

proved by him; or, being disapproved by him, shall be repassed by two-thirds of the senate and house of representatives, according to the rules and limitations prescribed in the case of a bill.

SECTION 8.

The congress shall have power:

1. To lay and collect taxes, duties, imposts, and excises; to pay the debts and provide for the common defense and general welfare of the United States; but all duties, imposts and excises shall be uniform throughout the United States.

2. To borrow money on the credit of the United States.

3. To regulate commerce with foreign nations, and among the several states, and with the Indian tribes.

4. To establish a uniform rule of naturalization, and uniform laws on the subject of bankruptcies throughout the United States.

5. To coin money, regulate the value thereof, and of foreign coin, and fix the standard of weights and measures.

6. To provide for the punishment of counterfeiting the securities and current coin of the United States.

7. To establish post-offices and post-roads.

8. To promote the progress of science and useful arts, by securing for limited times, to authors and inventors, the exclusive right to their respective writings and discoveries.

9. To constitute tribunals inferior to the supreme court; to define and punish piracies and felonies committed on the high seas, and offenses against the law of nations.

10. To declare war, grant letters of marque and reprisal, and make rules concerning captures on land and water.

11. To raise and support armies; but no appropriation of money to that use shall be for a longer term than two years:

12. To provide and maintain a navy.

13. To make rules for the government and regulation of the land and naval forces.

14. To provide for calling forth the militia to execute the laws of the Union, suppress insurrections, and repel invasions.

15. To provide for organizing, arming and disciplining the militia, and for governing such part of them as may be employed in the service of the United States; reserving to the states respectively the appointment of the officers and the authority of training the militia according to the discipline prescribed by congress.

16. To exercise exclusive legislation in all cases whatsoever, over such district (not exceeding ten miles square) as may, by cession of particular states, and the acceptance of congress, become the seat of government of the United States; and to exercise like authority over all places purchased, by the consent of the legislature of the state in which the same shall be, for the erection of forts, magazines, arsenals, dockyards, and other needful buildings; and

17. To make all laws which shall be necessary and proper for carrying into execution the foregoing powers, and all other powers vested by this constitution in the government of the United States, or in any department or office thereof.

SECTION 9.

1. The migration or importation of such persons as any of the states now existing shall think proper to admit, shall not be prohibited by the congress prior to the year one thousand eight hundred and eight; but a tax or duty may be imposed on such importation not exceeding ten dollars for each person.

2. The privilege of the writ of *habeas corpus* shall not be suspended, unless when, in cases of rebellion or invasion, the public safety may require it.

3. No bill of attainder, or *ex post facto* law shall be passed.

4. No capitation or other direct tax shall be laid, unless in proportion to the census or enumeration here.n before directed to be taken.

5. No tax or duty shall be laid on any articles exported from any state. No preference shall be given by any regulation of commerce or revenue to the ports of one state over those of another; nor shall vessels bound to or from one state be obliged to enter, clear, or pay duties in another.

6. No money shall be drawn from the treasury but in consequence of appropriations made by law; and a regular statement and account of the receipts and expenditures of all public moneys shall be published from time to time.

7. No title of nobility shall be granted by the United States; and no person holding any office of profit or trust under them shall, without the consent of the congress, accept any present, emolument, office, or title of any kind whatever, from any king, prince, or foreign state.

SECTION 10.

1. No state shall enter into any treaty, alliance or confederation; grant letters of marque and reprisal; c in money; emit bills of credit; make any thing but gold and silver coin a tender in payment of debts; pass any bill of attainder, *ex post facto* law, or law impairing the obligation of contracts; or grant any title of nobility.

2. No state shall, without the consent of congress, lay any imposts or duties on imports or exports, except what may be absolutely necessary for executing its inspection laws, and the net produce of all duties and imposts laid by any state on imports or exports shall be for the use of the treasury of the United States, and all such laws shall be subject to the revision and control of the congress. No state shall, without the consent of the congress, lay any duty of tonnage, keep troops or ships of war in time of peace, enter into any agreement or compact with another state, or with a foreign power, or engage in war, unless actually invaded, or in such imminent danger as will not admit of delay.

ARTICLE II.

SECTION 1.

1. The executive power shall be vested in a president of the United States of America. He shall hold his office during the term of four years; and, together with the vice-president chosen for the same term, be elected as follows:

2. Each state shall appoint, in such manner as the legislature thereof may direct, a number of electors equal to the whole number of senators and representatives to which the state may be entitled in the congress; but no senator or representative, or person holding an office of trust or profit under the United States, shall be appointed an elector.

3. [The electors shall meet in their respective states, and vote by ballot for two persons, of whom one at least shall not be an inhabitant of the same state with themselves. And they shall make a list of all the persons voted for, and of the number of votes for each; which list they shall sign and certify, and transmit sealed to the seat of government of the United States, directed to the president of the senate. The president of the senate shall, in the presence of the senate and house of representatives, open all the certificates, and the votes shall then be counted. The person having the greatest number of votes shall be the president, if such number be a majority of the whole number of electors appointed; and if there be more than one who have such majority, and have an equal number of votes, then the house of representatives shall immediately choose, by ballot, one of them for president; and if no person have a majority, then, from the five highest on the list, the said house shall, in like manner, choose the president. But in choosing the president, the vote shall be taken by states, the representation from each state having one vote; a quorum for this purpose shall consist of a member or members from two-thirds of the states, and a majority of all the states shall be necessary to a choice. In every case, after the choice of the president, the person having the greatest number of votes of the electors shall be the vice-president. But if there should remain two or more who have equal votes, the senate shall choose from them, by ballot, the vice-president.]*

4. The congress may determine the time of choosing the electors, and the day on which they shall give their votes, which day shall be the same throughout the United States.

5. No person, except a natural born citizen or a citizen of the United States at the time of the adoption of this constitution, shall be eligible to the office of president; neither shall any person be eligible to that office who shall not have attained to the age of thirty-five years, and been fourteen years a resident within the United States.

6. In case of the removal of the president from office, or of his death, resignation, or inability to discharge the powers and duties of the said office, the same shall devolve on the vice-president; and the congress may, by law, provide for the case of removal, death, resignation or inability, both of the president and vice-president, declaring what officer shall then act as president; and such officer shall act accordingly, until the disability be removed, or a president shall be elected.

7. The president shall, at stated times, receive for his services a compensation which shall neither be increased nor diminished dur-

*This paragraph has been superseded and annulled by the 12th amendment.

ing the period for which he shall have been elected; and he shall not receive within that period any other emolument from the United States, or any of them.

8. Before he enter on the execution of his office, he shall take the following oath or affirmation :

"I do solemnly swear (or affirm) that I will faithfully execute the office of president of the United States; and will, to the best of my ability, preserve, protect and defend the constitution of the United States."

SECTION 2.

1. The president shall be commander-in-chief of the army and navy of the United States, and of the militia of the several states, when called into the actual service of the United States. He may require the opinion, in writing, of the principal officer in each of the executive departments, upon any subject relating to the duties of their respective offices; and he shall have power to grant reprieves and pardons for offenses against the United States, except in cases of impeachment.

2. He shall have power, by and with the advice and consent of the senate, to make treaties, provided two-thirds of the senators present concur; and he shall nominate, and by and with the advice and consent of the senate shall appoint ambassadors, other public ministers and consuls, judges of the supreme court, and all other officers of the United States whose appointments are not herein otherwise provided for, and which shall be established by law. But the congress may, by law, vest the appointment of such inferior officers as they think proper, in the president alone, in the courts of law, or in the heads of departments.

3. The president shall have power to fill up all vacancies that may happen during the recess of the senate, by granting commissions which shall expire at the end of their next session.

SECTION 3.

1. He shall, from time to time, give to the congress information of the state of the Union, and recommend to their consideration such measures as he shall judge necessary and expedient. He may, on extraordinary occasions, convene both houses, or either of them; and in case of disagreement between them, with respect to the time of adjournment, he may adjourn them to such a time as he shall think proper. He shall receive ambassadors and other public ministers. He shall take care that the laws be faithfully executed; and shall commission all the officers of the United States.

SECTION 4.

1. The president, vice-president and all civil officers of the United States, shall be removed from office on impeachment for, and conviction of treason, bribery or other high crimes and misdemeanors.

ARTICLE III.

SECTION 1.

1. The judicial power of the United States shall be vested in one supreme court, and in such inferior courts as the congress may, from

time to time, ordain and establish. The judges, both of the supreme and inferior courts, shall hold their offices during good behavior; and shall, at stated times, receive for their services a compensation, which shall not be diminished during their continuance in office.

SECTION 2.

1. The judicial power shall extend to all cases in law and equity arising under this constitution, the laws of the United States, and treaties made, or which shall be made, under their authority; to all cases affecting ambassadors, other public ministers and consuls; to all cases of admiralty and maritime jurisdiction; to controversies to which the United States shall be a party; to controversies between two or more states; between a state and citizens of another state; between citizens of different states; between citizens of the same state claiming lands under grants of different states, and between a state, or the citizens thereof, and foreign states, citizens or subjects.

2. In all cases affecting ambassadors, other public ministers and consuls, and those in which a state shall be party, the supreme court shall have original jurisdiction. In all the other cases before mentioned, the supreme court shall have appellate jurisdiction, both as to law and fact, with such exceptions and under such regulations as the congress shall make.

3. The trial of all crimes, except in cases of impeachment, shall be by jury, and such trial shall be held in the state where the said crimes shall have been committed; but when not committed within any state, the trial shall be at such place or places as the congress may by law have directed.

SECTION 3.

1. Treason against the United States shall consist only in levying war against them or in adhering to their enemies, giving them aid and comfort. No person shall be convicted of treason, unless on the testimony of two witnesses to the same overt act, or on confession in open court.

2. The congress shall have power to declare the punishment of treason; but no attainder of treason shall work corruption of blood, or forfeiture, except during the life of the person attainted.

ARTICLE IV.

SECTION 1.

1. Full faith and credit shall be given in each state to the public acts, records and judicial proceedings of every other state; and the congress may, by general laws, prescribe the manner in which such acts, records and proceedings shall be proved, and the effect thereof.

SECTION 2.

1. The citizens of each state shall be entitled to all privileges and immunities of citizens in the several states.

2. A person charged in any state with treason, felony or other crime, who shall flee from justice, and be found in another state, shall, on demand of the executive authority of the state from which

he fled, be delivered up, to be removed to the state having jurisdiction of the crime.

8. No person held to service or labor in one state under the laws thereof, escaping into another, shall, in consequence of any law or regulation therein, be discharged from such service or labor; but shall be delivered up on claim of the party to whom such service or labor may be due.

SECTION 3.

1. New states may be admitted by the congress into this Union; but no new state shall be formed or erected within the jurisdiction of any other state, nor any state be formed by the junction of two or more states or parts of states, without the consent of the legislatures of the states concerned, as well as of the congress.

2. The congress shall have power to dispose of, and make all needful rules and regulations respecting, the territory or other property belonging to the United States; and nothing in this constitution shall be so construed as to prejudice any claims of the United States, or of any particular state.

SECTION 4.

1. The United States shall guarantee to every state in this Union a republican form of government, and shall protect each of them against invasion; and, on application of the legislature, or of the executive (when the legislature cannot be convened), against domestic violence.

ARTICLE V.

1. The congress, whenever two-thirds of both houses shall deem it necessary, shall propose amendments to this constitution; or, on the application of the legislatures of two-thirds of the several states, shall call a convention for proposing amendments, which, in either case, shall be valid to all intents and purposes, as part of this constitution, when ratified by the legislatures of three-fourths of the several states, or by conventions in three-fourths thereof, as the one or the other mode of ratification may be proposed by the congress; provided that no amendment, which may be made prior to the year one thousand eight hundred and eight, shall in any manner affect the first and fourth clauses in the ninth section of the first article; and that no state, without its consent, shall be deprived of its equal suffrage in the senate.

ARTICLE VI.

1. All debts contracted and engagements entered into before the adoption of this constitution shall be as valid against the United States under this constitution, as under the confederation.

2. This constitution, and the laws of the United States which shall be made in pursuance thereof, and all treaties made, or which shall be made, under the authority of the United States, shall be the supreme law of the land; and the judges in every state shall be bound thereby, anything in the constitution or laws of any state to the contrary notwithstanding.

3. The senators and representatives before mentioned, and the members of the several state legislatures, and all executive and judi-

cial officers, both of the United States and of the several states, shall be bound by oath or affirmation to support this constitution ; but no religious test shall ever be required as a qualification to any office or public trust under the United States.

ARTICLE VII.

1. The ratification of the conventions of nine states shall be sufficient for the establishment of this constitution between the states so ratifying the same.

Done in convention by the unanimous consent of the states present, the seventeenth day of September, in the year of our Lord one thousand seven hundred and eighty-seven, and of the Independence of the United States of America the twelfth. In witness whereof we have hereunto subscribed our names.

GEORGE WASHINGTON,

President, and Deputy from Virginia.

AMENDMENTS TO THE CONSTITUTION OF THE UNITED STATES.

[The following amendments were proposed at the first session of the first congress of the United States, which was begun and held at the city of New York on the 4th of March, 1789, and were adopted by the requisite number of states. Laws of the U. S., vol. 1, page 82.]

[The following preamble and resolution preceded the original proposition of the amendments, and as they have been supposed by a high equity judge (8th Wendell's Reports, p. 100) to have an important bearing on the construction of those amendments, they are here inserted. They will be found in the journals of the first session of the first congress.

CONGRESS OF THE UNITED STATES.

Begun and held at the city of New York, on Wednesday, the 4th day of March, 1789.

The conventions of a number of the states having, at the time of their adopting the constitution, expressed a desire, in order to prevent misconstruction or abuse of its powers, that further declaratory and restrictive clauses should be added, and as extending the ground of public confidence in the government will best insure the beneficent ends of its institution :

Resolved, By the Senate and House of Representatives of the United States of America, in congress assembled, two-thirds of both houses concurring, that the following articles be proposed to the legislatures of the several states, as amendments to the constitution of the United States ; all or any of which articles, when ratified by three-fourths of the said legislatures, to be valid to all intents and purposes, as part of the said constitution, namely:]

ARTICLE I.

Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof ; or abridging the freedom of speech or of the press ; or the right of the people peaceably to assemble, and to petition the government for a redress of grievances.

ARTICLE II.

A well regulated militia being necessary to the security of a free state, the right of the people to keep and bear arms shall not be infringed.

ARTICLE III.

No soldier shall, in time of peace, be quartered in any house without the consent of the owner, nor in time of war but in a manner to be prescribed by law.

ARTICLE IV.

The right of the people to be secure in their persons, houses, paper and effects, against unreasonable searches and seizures, shall not be violated ; and no warrants shall issue but upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

ARTICLE V.

No person shall be held to answer for a capital or otherwise infamous crime, unless on a presentment or indictment of a grand jury, except in cases arising in the land or naval forces, or in the militia, when in actual service in time of war or public danger ; nor shall any person be subject for the same offense to be twice put in jeopardy of life or limb ; nor shall be compelled, in any criminal case, to be a witness against himself, nor be deprived of life, liberty or property, without due process of law ; nor shall private property be taken for public use without just compensation.

ARTICLE VI.

In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial, by an impartial jury of the state and district wherein the crime shall have been committed, which district shall have been previously ascertained by law ; and to be informed of the nature and cause of the accusation ; to be confronted with the witnesses against him ; to have compulsory process for obtaining witnesses in his favor, and to have the assistance of counsel for his defense.

ARTICLE VII.

In suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved ; and no fact tried by a jury shall be otherwise re-examined in any court of the United States, than according to the rules of the common law.

ARTICLE VIII.

Excessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted.

ARTICLE IX.

The enumeration in the constitution of certain rights shall not be construed to deny or disparage others retained by the people.

ARTICLE X.

The powers not delegated to the United States by the constitution, nor prohibited by it to the states, are reserved to the states respectively, or to the people.

[The following amendment was proposed at the second session of the third congress. It is printed in the Laws of the United States, vol. 1, p. 73, as article 11.]

ARTICLE XI.

The judicial power of the United States shall not be construed to extend to any suit in law or equity, commenced or prosecuted against one of the United States by citizens of another state, or by citizens or subjects of any foreign state.

[The three following sections were proposed as amendments at the first session of the eighth congress. They are printed in the Laws of the United States as article 12.]

ARTICLE XII.

1. The electors shall meet in their respective states, and vote by ballot for president and vice-president, one of whom at least shall not be an inhabitant of the same state with themselves. They shall name in their ballots the person voted for as president, and in distinct ballots the person voted for as vice-president; and they shall make distinct lists of all persons voted for as president, and of all persons voted for as vice-president, and of the number of votes for each; which lists they shall sign and certify, and transmit sealed to the seat of the government of the United States, directed to the president of the senate. The president of the senate shall, in the presence of the senate and house of representatives, open all the certificates, and the votes shall then be counted. The person having the greatest number of votes for president shall be the president, if such number be a majority of the whole number of electors appointed; and if no person have such majority, then from the persons having the highest numbers, not exceeding three, on the list of those voted for as president, the house of representatives shall choose immediately, by ballot, the president. But in choosing the president, the votes shall be taken by states, the representation from each state having one vote; a quorum for this purpose shall consist of a member or members from two-thirds of the states, and a majority of all the states shall be necessary to a choice. And if the house of representatives shall not choose a presi-

dent, whenever the right of choice shall devolve upon them, before the fourth day of March next following, then the vice-president shall act as president as in the case of the death or other constitutional disability of the president.

2. The person having the greatest number of votes as vice-president shall be the vice-president, if such number be a majority of the whole number of electors appointed, and if no person have a majority, then from the two highest numbers on the list the senate shall choose the vice-president. A quorum for the purpose shall consist of two-thirds of the whole number of senators, and a majority of the whole number shall be necessary to a choice.

3. But no person constitutionally ineligible to the office of president shall be eligible to that of vice-president of the United States.

ARTICLE XIII.*

SECTION 1.

Neither slavery nor involuntary servitude, except as a punishment for crime, whereof the party shall have been duly convicted, shall exist within the United States, or any place subject to their jurisdiction.

SECTION 2.

Congress shall have power to enforce this article by appropriate legislation.

ARTICLE XIV.†

SECTION 1.

All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the state wherein they reside. No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty or property, without due process of law, nor deny to any person within its jurisdiction the equal protection of the laws.

SECTION 2.

Representatives shall be apportioned among the several states according to their respective numbers, counting the whole number of persons in each state, excluding Indians not taxed. But when the right to vote at any election for the choice of electors for president and vice-president of the United States, representatives in congress, the executive and judicial officers of a state, or the members of the legislature thereof, is denied to any of the male inhabitants of such state, being twenty-one years of age, and citizens of the United States, or in any way abridged, except for participation in rebellion or other crime, the basis of representation therein shall be reduced in the pro-

*Proposed by Congress February 1, 1865. Ratification announced by Secretary of State, December 18, 1865.

†Proposed by Congress June 16, 1866. Ratification announced by Secretary of State July 28, 1868.

portion which the number of such male citizens shall bear to the whole number of male citizens twenty-one years of age in such state.

SECTION 3.

No person shall be a senator or representative in congress, or elector of president and vice-president, or hold any office, civil or military, under the United States, or under any state, who, having previously taken an oath as a member of congress, or as an officer of the United States, or as a member of any state legislature, or as an executive or judicial officer of any state, to support the constitution of the United States, shall have engaged in insurrection or rebellion against the same, or given aid or comfort to the enemies thereof. But congress may, by a vote of two-thirds of each house, remove such disability.

SECTION 4.

The validity of the public debt of the United States authorized by law, including debts incurred for payment of pensions and bounties for services in suppressing insurrection or rebellion, shall not be questioned. But neither the United States nor any state shall assume or pay any debt or obligation incurred in aid of insurrection or rebellion against the United States, or any claim for the loss or emancipation of any slave; but all such debts, obligations, and claims shall be held illegal and void.

SECTION 5.

The congress shall have power to enforce, by appropriate legislation, the provisions of this article.

ARTICLE XV.*

SECTION 1.

The right of citizens of the United States to vote shall not be denied or abridged by the United States or by any state on account of race, color, or previous condition of servitude.

SECTION 2.

The congress shall have power to enforce this article by appropriate legislation.

The United States.

A Republic, it is the middle division of North America. Alaska, a territory occupying the northwestern part of North America, is partly in the North Temperate Zone and partly in the North Frigid Zone. It was purchased from Russia by the United States. Extends from the Atlantic Ocean on the east to the Pacific Ocean on the west, from the Dominion of Canada on the north to the republic of Mexico and the Gulf of Mexico on the south. The distance across the United States from east to west through the center, is about 2,600 miles, and

*Proposed by Congress February 27, 1869. Ratification announced by Secretary of State, March 30, 1870.

Washington (capital U. S.), pop. 230,392 and Georgetown, pop. 14,046, from north to south about 1,600 miles. The shortest distance between the Dominion of Canada and the Gulf of Mexico is about 800 miles.

The high mountains and plateaus of the United States are in the western part. There the mining of gold and silver, and the raising of cattle and sheep, constitute the leading occupations of the people.

The plains, prairies, slopes and lowlands extending from the highland region eastward to the Atlantic Ocean, are remarkable for their fertile soil, which produces immense crops of grain, cotton, fruits and vegetables.

The valleys of the Pacific Slope are noted for their mild, genial climate and their great yield of wheat, fruits and vegetables.

Coal and iron are mined extensively in various parts of the United States.

The variety and importance of the products and industries of this country are due principally to its vast extent of territory and its great diversity of soil, elevation and climate.

Its increase in population, wealth and power is unsurpassed. A century ago there were but thirteen states, containing less than 4,000,000 inhabitants. Now there are forty-five states, five territories, and the District of Columbia, with a total population of about 70,000,000. A territory is under the control of the General Government of the United States, until it is admitted into the Union as a state by Congress. The original thirteen states were New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina and Georgia. The first states admitted after them were Kentucky, Vermont, Tennessee, Ohio, Louisiana, Indiana and Mississippi.

The first colonies in the region now called the United States were established by the English, in Virginia, in 1607; by the Dutch, in New York, in 1613; and by the Pilgrims, in Massachusetts, in 1620.

All were subject to Great Britain from 1664 to 1776, when the thirteen colonies declared themselves free and independent states.

Each state has its own constitution, laws, legislature, and governor, while all the states are united under the constitution and laws of the United States. A state is entitled to be represented in the United States Senate by two senators, and in the House of Representatives by one member for every 170,000 inhabitants. Every state is entitled to, at least, one member. A territory may send a delegate to the House, but he has no vote. There are at present ninety senators and 357 members of the House of Representatives. The states which have the largest representation in the House are New York 36 members, Pennsylvania 32, Ohio 23, and Illinois 24. The states and territories of the United States have legislatures consisting of two houses similar to those of Congress, elected by the people. They are divided into counties, which are, in some cases, subdivided into townships. The divisions of Louisiana corresponding to counties are called parishes. The highest officials in a state are the Governor, Lieutenant-Governor, Secretary of State, Attorney-General, and Superintendent of Schools. Towns and villages are collections of houses and inhabitants. Cities have certain rights and privileges not possessed by towns and villages. The affairs of a city are usually con-

trolled by its mayor and aldermen. A county seat is the chief town in which the official business of the county is conducted.

The general government comprises three departments, the legislative, the judicial and the executive. It has control of all matters pertaining to commerce and treaties with foreign countries, the army and navy, the declaration of war, the post-offices, and the coining of money.

The legislative power is vested in Congress, which consists of the Senate (composed of two senators from each state, chosen by the state legislature, for six years. The Vice-President of the United States is the president of the Senate) and House of Representatives. Congress holds its sessions in Washington. The session of Congress begins on the first Monday in December of each year. A law can not take effect unless passed by both the Senate and the House of Representatives, and approved by the President. If, however, he disapprove a measure which has been passed by both houses of Congress, it may become a law on being repassed by two-thirds of each House.

The judicial power is vested in the Supreme Court, which interprets the laws. The Supreme Court consists of a chief-justice and eight associate justices, all appointed for life by the president with the consent of the Senate.

The executive power is vested in the President, whose duty it is to execute or enforce the laws. He is elected for four years. The President and Vice-President are elected by a number of electors, called the electoral college, chosen by the people of the states, or their legislatures. Each state is entitled to a number of electors, equal to the whole number of senators and representatives to which it is entitled in Congress. In case of a vacancy in the office of President, it shall be filled by the Vice-President. If there be no Vice-President, the law of 1886 vests the succession in those members of the cabinet who are constitutionally eligible, in the following order: Secretary of State, Secretary of the Treasury, Secretary of War, Attorney-General, Postmaster-General, Secretary of the Navy, and Secretary of the Interior.

District of Columbia.

Named for Columbus. Fixed as seat of U. S. government 1790, by act of Congress. Formed out of Washington Co., Md. (64 sq. miles.) Government removed to District 1800. Captured by British 1814, and capitol, executive mansion and congressional library burned. Governed by Congress till 1871, when a governor and secretary were appointed, and a delegate to represent the territory in Congress; also a legislative body of 33 (11 appointed by the president and 22 elected) was created. Executive officers still appointed by president. Officers appointed are paid by the United States, those elected, by the District. Citizens of District have no vote for national officers. Schools superior. Legal interest 6 per cent., by contract 10, more forfeits entire interest. Surface made up of flats and hills. Similar in all features and products to Southern Maryland. Cities—

THE WHITE HOUSE AT WASHINGTON, D. C.

The White House, at Washington, D. C., is 170 feet long by 86 feet wide. The largest apartment, known as the east room, is 80 by 40 feet in dimension and 23 feet high. The adjoining blue room, finished in blue and gold, is devoted to receptions, diplomatic and social. The green and red rooms, so called from their finishing, are each 80 by 20 feet. The rooms on the second floor are occupied by the executive office and the apartments of the President's family.

THE WASHINGTON MONUMENT.

The corner-stone was laid by President Polk, July 4, 1848, and December 8, 1884, the cap-stone was set in position. The foundations are $126\frac{1}{2}$ feet square and 36 feet 8 inches deep. The base of the monument is 55 feet $1\frac{1}{2}$ inches square, and the walls 15 feet $\frac{1}{2}$ inch thick. At the 500 foot mark, where the pyramidal top begins, the shaft is 34 feet $5\frac{1}{2}$ inches square and the walls are 18 inches thick. The monument is made of blocks of marble 2 feet thick, and it is said there are over 18,000 of them. The height above the ground is 555 feet. The pyramidal top terminates in an aluminum tip, which is 9 inches high and weighs 100 ounces. The mean pressure of the monument is 5 tons per square foot, and the total weight, foundation and all, is nearly 81,000 tons. The door at the base, facing the capitol, is 8 feet wide and 16 feet high, and enters a room 25 feet square. An immense iron framework supports the machinery of the elevator, which is hoisted with steel wire ropes two inches thick. At one side begin the stairs, of which there are fifty flights, containing eighteen steps each. Five hundred and twenty feet from the base there are eight windows, 18x24 inches, two on each face. The area at the base of the pyramidal top is $1,187\frac{1}{2}$ feet, space enough for a six-room house, each room to be 12x16 feet. The Cologne Cathedral is 525 feet high; the pyramid of Cheops, 486; Strasburg Cathedral, 474; St. Peter's at Rome, 448; the capitol at Washington, 306, and Bunker Hill monument, 221 feet. The Washington monument is the highest structure in the world; total cost, \$1,500,000.

Directions for Securing Copyrights.

UNDER THE REVISED ACTS OF CONGRESS, INCLUDING THE PROVISIONS FOR FOREIGN COPYRIGHT, BY ACT OF MARCH 3, 1891.

1 A *printed* copy of the title of the book, map, chart, dramatic or musical composition, engraving, cut, print, photograph, or chromo, or a *description* of the painting, drawing, statue, statuary, or model or design for a work of the fine arts, for which copyright is desired, must be delivered to the Librarian of Congress or deposited in the mail, within the United States, *prepaid*, addressed

LIBRARIAN OF CONGRESS,
Washington, D. C.

This must be done on or before day of publication in this or any foreign country.

2. The legal fee for recording each copyright claim is fifty cents, and for a copy of this record (or certificate of copyright under seal of the office) an additional fee of fifty cents is required, making \$1, if certificate is wanted, which will be mailed as soon as reached in the records.

For publications which are the production of persons not citizens or residents of the United States, the fee for recording title is \$1, and fifty cents additional for a copy of the record. Certificates covering more than one entry in one certificate are not issued.

Patent Office Procedure.

Patents are issued under seal of the United States to any citizen of the United States or subject of any foreign power who may have invented or discovered any new article of manufacture, machinery, composition of matter or process, providing the same has not been in public use or on sale in this or any foreign country for more than two years. Fee for patents are \$15 on filing of applications and \$20 payable within six months after patent is allowed.

Joint inventors are entitled to joint patent, and every patent is issued to the inventor, his heirs or assigns for a term of seventeen years.

Design patents are also issued to anyone who, by his own industry, genius, efforts and expense invents or produces any new design for the printing of fabric or manufacture of carpets, etc., or any new or original cast, impression, print, or statue, shape or configuration not known or used prior to his designing or production thereof.

Fees for design patents are for three and one-half years, \$10; seven years, \$15, and for fourteen years, \$30.

Blank forms for applications and Patent Office Rules can be procured by writing to the Commissioner of Patents, Washington, D. C.

To Find Length of Day or Night.

At any time of the year add 12 hours to the time of the sun's setting, and from the sum subtract the time of rising for the length of the day. Subtract the time of setting from 12 hours, and to the remainder add the time of rising next morning for the length of the night. These rules are equally true for apparent time.

Weight Per Bushel of Grain, etc.

The following Table shows the number of pounds per bushel required, by law or custom, in the sale of articles specified, in the several States of the Union.

STATES.	Barley.	Buckwheat.	Coal.	Corn, shel'd.	Corn Meal.	Onions.	Oats.	Potatoes.	Rye.	Wheat.	Salt.	Turnips.	Beans, wh.	Clover S'd.	Timothy.
Maine.....	48 48	..	..	56 50	52	30 60	..	60	..	50	64	..	..	..	..
N. Hampshire.....	..	..	..	56 50	..	30 60	56 60	..	..	..	..	..	..	..	..
Vermont.....	48 48	..	..	..	..	32 60	56 60	70	..	..	..	..	64 60	42	..
Massachusetts.....	48 48	..	..	56 50	52	32 60	56 60	..	..	..	..	..	..	..	..
Connecticut.....	..	45	..	56	..	32 60	56 56	..	..	..	..	..	..	..	..
New York.....	48 48	..	..	58	..	32 60	56 60	..	..	..	..	62 60	44	..	..
New Jersey.....	48 50	..	..	56	..	30 60	56 60	..	..	..	..	..	64	..	..
Pennsylvania.....	47 48	..	..	56	..	30 56	56 60	85	..	..	..	62	..	..	..
Delaware.....	..	..	..	56	..	..	..	..	..	..	..	..	..	..	..
Maryland.....	48 48	..	..	56	..	57 32	60 56	60	56	..	..	62 64	45	..	..
Dist. Columbia.....	47 48	..	..	56 48	57	32 56	56 60	50	55	..	..	62 60	45	..	..
Virginia.....	48 48	..	..	56 50	..	32 60	56 60	..	..	56	60	64	45	..	..
West Virginia.....	48 52	80	56	48	..	32 60	56 60	..	..	60	60	60	45	..	..
North Carolina.....	48 50	..	54	46	..	30	..	56	60	..	..	..	64	..	..
South Carolina.....	48 56	80	56	50	57	33 60	56 60	50	..	..	..	60 60	..	..	..
Georgia.....	40	..	80	58	48	57	35	56	..	60	56	..	60	45	..
Louisiana.....	32	..	..	56	..	32	..	..	..	..	..	..	..	..	..
Arkansas.....	48 52	80	56	50	57	32 60	56 60	50	..	..	..	60 60	45	..	..
Tennessee.....	48 50	..	56	50	56	32 60	56 60	..	..	..	..	..	60	..	45
Kentucky.....	48 52	..	56	50	57	33 56	56 60	50	..	..	..	..	60 60	45	..
Ohio.....	48 50	..	56	..	..	32 60	56 60	..	..	..	..	..	60 60	45	..
Michigan.....	48 48	80	56	..	54	32 60	56 60	56	56	..	..	..	60 60	45	..
Indiana.....	48 50	70	56	50	48	32 60	56 60	50	..	..	..	..	60 60	..	..
Illinois.....	48 52	..	56	48	57	32 60	56 60	50	..	..	..	..	60 60	..	..
Wisconsin.....	48 50	..	56	..	..	32 60	56 60	..	..	..	..	..	60	..	..
Minnesota.....	48 42	..	56	..	..	32 60	56 60	..	..	..	..	..	..	..	..
Iowa.....	48 52	..	56	..	57	33 60	56 60	50	..	..	..	..	60 60	45	..
Missouri.....	48 52	..	56	..	57	32 60	56 60	50	..	..	..	..	60 60	45	..
Kansas.....	50 50	..	56	50	57	32 60	56 60	50	55	60	..	..	..	45	..
Nebraska.....	48 52	..	56	50	57	34 60	56 60	50	55	60	60	45	..	..	..
California.....	50 40	..	52	..	..	32	..	54	60	..	..	..	..	..	..
Oregon.....	46 42	..	56	..	..	36	60	56	60	..	..	..	..	60	..

Standard Time Divisions adopted by the Railroads.

EASTERN STANDARD—75th Meridian. Canada, between Quebec and Detroit,—U. S. east of Buffalo, N. Y.; Pittsburg, Pa.; Wheeling and Huntington, W. Va.; Bristol, Tenn.; Charlotte, N. C., and Augusta, Ga.

CENTRAL STANDARD—90th Meridian. West from "Eastern" limits, as above, to Broadview, Canada; to the Missouri River in Dakota; North Platte and McCook, Nebraska; Wallace and Dodge City, Kansas; Toyah and Sanderson, Texas.

MOUNTAIN STANDARD—105th Meridian. West from "Central" limits to Heron, Montana; Ogden, Utah; Needles and Yuma, Arizona.

PACIFIC STANDARD—120th Meridian. West from "Mountain" limits to coast.

CORRECTION FOR THE FOLLOWING CITIES.

EASTERN STANDARD.		CENTRAL STANDARD.	
75° Longitude.		90° Longitude.	
	Minutes.		Minutes.
Bangor, Me.	— 25	Cleveland, Ohio.	— 33
Augusta, Me.	— 21	Columbus, Ohio.	— 28
Portland, Me.	— 19	Detroit, Mich.	— 28
Boston, Mass.	— 16	Toledo, Ohio.	— 26
Newport, R. I.	— 15	Dayton, Ohio.	— 23
Providence, R. I.	— 14	Cincinnati, Ohio.	— 22
Concord, N. H.	— 14	Louisville, Ky.	— 18
New London, Conn.	— 11	Indianapolis, Ind.	— 16
Springfield, Mass.	— 10	Chicago, Ill.	— 10
Montpelier, Vt.	— 10	Milwaukee, Wis.	— 8
Hartford, Conn.	— 9	Springfield, Ill.	— 2
Montreal, Que.	— 6	Memphis, Tenn.	0
Albany, N. Y.	— 5	New Orleans, La.	0
New York, N. Y.	— 4	St. Louis, Mo.	+ 1
Utica, N. Y.	+ 1	Rock Island, Ill.	+ 3
Philadelphia, Pa.	+ 1	Dubuque, Iowa.	+ 3
Syracuse, N. Y.	+ 5	Burlington, Iowa.	+ 5
Baltimore, Md.	+ 6	St. Paul, Minn.	+ 12
Washington, D. C.	+ 8	Des Moines, Iowa.	+ 14
Rochester, N. Y.	+ 11	Kansas City, Mo.	+ 18
Buffalo, N. Y.	+ 16	Galveston, Texas.	+ 19
Pittsburg, Pa.	+ 20	Omaha, Neb.	+ 24
MOUNTAIN STANDARD.		PACIFIC STANDARD.	
105° Longitude.		120° Longitude.	
Denver, Col.	0	Sacramento, Cal.	+ 6
Salt Lake City, Utah.	+ 28	San Francisco, Cal.	+ 10

Presidents of the United States.

N.	NAMES.	Born.	Inaugurated.	Term of Office.	Died.	Native of	Residence when elect'd	Political Party.
1	George Washington.	Feb. 22, 1732	Apr. 30, 1789	8 years	Dec. 14, 1799	Va.	Va.	Federal.
2	John Adams.	Oct. 31, 1735	Mar. 4, 1797	4 "	July 4, 1826	Mass.	Mass.	"
3	Thomas Jefferson.	Apr. 2, 1743	" 4, 1801	" "	" 4, 1826	Va.	Va.	Republic'n
4	James Madison.	Mar. 16, 1751	" 4, 1809	8 "	June 28, 1836	Va.	Va.	"
5	James Monroe.	Apr. 28, 1758	" 4, 1817	8 "	July 4, 1831	Va.	Va.	"
6	John Quincy Adams	July 11, 1767	" 4, 1825	4 "	Feb. 23, 1848	Mass.	Mass.	Coalition.
7	Andrew Jackson.	Mar. 15, 1767	" 4, 1829	8 "	June 8, 1845	S. C.	Tenn.	Democrat
8	Martin Van Buren.	Dec. 5, 1782	" 4, 1837	4 "	July 24, 1862	N. Y.	N. Y.	"
9	Wm. H. Harrison	Feb. 9, 1773	" 4, 1841	1 month.	April 4, 1841	Ohio.	Ohio.	Whig.
10	John Tyler.	Mar. 29, 1790	Apr. 6, 1841	3 yrs. 11 mos.	Jan. 18, 1862	Va.	Va.	"
11	James K. Polk.	Nov. 2, 1795	Mar. 4, 1845	4 years	June 15, 1849	N. C.	Tenn.	Democrat.
12	Zachary Taylor.	Sept. 24, 1784	" 4, 1849	1 year 4 mos.	July 9, 1850	Va.	La.	Whig.
13	Millard Fillmore.	Feb. 7, 1800	July 9, 1850	2 years 8 mos.	Mar. 7, 1874	N. Y.	N. Y.	"
14	Franklin Pierce.	Nov. 23, 1804	Mar. 4, 1853	4 years	Oct. 8, 1869	N. H.	N. H.	Democrat.
15	James Buchanan.	Apr. 23, 1791	" 4, 1857	4 "	June 1, 1868	Penn.	Penn.	"
16	Abraham Lincoln.	Feb. 12, 1809	" 4, 1861	4 yrs. 40 days.	April 15, 1865	Ky.	Ill.	Republic'n
17	Andrew Johnson.	Dec. 29, 1808	Apr. 15, 1865	8 yrs. 10½ mos.	July 31, 1875	N. C.	Tenn.	"
18	Ulysses S. Grant.	Apr. 27, 1822	Mar. 4, 1869	8 years	July 23, 1885	Ohio.	Ill.	"
19	Rutherford B. Hayes.	Oct. 4, 1822	" 4, 1877	" "	Jan. 17, 1893	"	Ohio.	"
20	James A. Garfield.	Nov. 19, 1831	" 4, 1881	6½ months.	Sept. 19, 1881	"	"	"
21	Chester A. Arthur.	Oct. 6, 1830	Sept. 20, 1881	3 yrs. 9½ mos.	Nov. 18, 1886	Vt.	N. Y.	Democrat.
22	Grover Cleveland.	Mar. 18, 1837	Mar. 4, 1885	4 years	"	N. J.	Ind.	Republic'n
23	Benjamin Harrison.	Aug. 20, 1833	" 4, 1889	4 "	"	Ohio.	N. Y.	Democrat.
24	Grover Cleveland.	"	" 4, 1893	4 "	"	N. J.	N. Y.	Republic'n
25	William McKinley.	Feb. 26, 1844	" 4, 1897	"	"	Ohio.	Ohio.	Republic'n

HELP! In case of Accidents.

Drowning. 1. Loosen clothing, if any. 2. Empty lungs of water by laying body on its stomach and lifting it by the middle so that the head hangs down. Jerk the body a few times. 3. Pull tongue forward, using handkerchief, or pin with string, if necessary. 4. Imitate motion of respiration by alternately compressing and expanding the lower ribs, about twenty times a minute. Alternately raising and lowering the arms from the sides up above the head will stimulate the action of the lungs. Let it be done gently but persistently. 5. Apply warmth and friction to extremities. 6. By holding tongue forward, closing the nostrils and pressing the "Adam's apple" back (so as to close entrance to stomach), direct inflation may be tried. Take a deep breath and breathe it forcibly into the mouth of patient, compress the chest to expel the air, and repeat the operation. 7. **DON'T GIVE UP!** People have been saved after hours of patient, vigorous effort. 8. When breathing begins, get patient into a warm bed, give WARM drinks, or spirits in teaspoonfuls, fresh air and quiet.

Burns and Scalds. Cover with Cooking Soda and lay wet cloths over it. Whites of Eggs and Olive Oil. Olive or Linseed Oil, plain, or mixed with Chalk or Whiting.

Lightning. Dash cold water over a person struck.

Sunstroke. Loosen clothing. Get patient into shade and apply ice cold water to head.

Mad Dog or Snake Bite. Tie cord tight above wound. Suck the wound and cauterize with caustic or white-hot iron at once, or cut out adjoining parts with a sharp knife.

Venomous Insects Stings, &c. Apply weak Ammonia, Oil, Salt Water, or Iodine.

Fainting. Place flat on back; allow fresh air and sprinkle with water.

Tests of Death. Hold mirror to mouth. If living, moisture will gather. Push pin into flesh. If dead the hole will remain, if alive it will close up.

Cinders in the Eye. Roll soft paper up like a lamplighter and wet the tip to remove, or use a medicine dropper to draw it out. Rub the *other* eye.

Fire in one's Clothing. *Don't run*,—especially not down stairs or out of doors. Roll on carpet, or wrap in woolen rug or blanket. Keep the head down, so as not to inhale flame.

Fire in a Building. Crawl on the floor. The clearest air is the lowest in the room. Cover head with a woolen wrap, wet if possible. Cut holes for the eyes. *Don't get excited.*

Fire in Kerosene. *Don't use water*, it will spread the flames. Dirt, sand or flour is the best extinguisher; or smother with woolen rug, table-cloth or carpet.

Suffocation from Inhaling Burning-Gas. Get into the fresh air as soon as possible and lie down. Keep warm. Take Ammonia,—twenty drops to a tumbler of water, at frequent intervals.

Antidotes For Poisons.

First. Send for a Physician.

Second. INDUCE VOMITING, by tickling throat with feather or finger. Drink hot water or strong Mustard and water. Swallow Sweet Oil or whites of Eggs.

Acids are antidotes for ALKALIES, and *vice versa*.

SPECIAL POISONS AND ANTIDOTES.

Acids. MURIATIC, OXALIC, ACETIC. SULPHURIC (Oil of Vitriol). NITRIC (Aqua Fortis). } Soap-suds, Magnesia, Lime-water.

Prussic Acid. Ammonia in water. Dash water in face.

Carbolic Acid. Flour and water, mucilaginous drinks.

Alkalies. POTASH. LYE. HARTSHORN. AMMONIA. } Vinegar or Lemon juice in water. /

Arsenic. } Milk; Raw Eggs, Sweet Oil, Lime-water, Flour and water.
Erat Poison. }
Paris Green. }

Bug Poison. }
Lead. } Whites of Eggs or Milk in large doses.
Saltpetre. }
Corrosive Sublimate. }
Sugar of Lead. }
Blue Vitriol. }

Chloroform. } Dash cold water on head and chest. Artificial respiration.
Chloral. } tion. Piece of ice in rectum.
Ether. }

Carbonate of Soda. }
Copperas. } Soap-suds and mucilaginous drinks.
Cobalt. }

Iodine. } Starch and water. Astringent infusions. Strong
Antimony. } tea.
Tartar Emetic. }

Mercury AND ITS SALTS. Whites of Eggs. Milk. Mucilages.

Nitrate of Silver. } Salt and water.
Lunar Caustic. }

Opium. }
Morphine. } Strong coffee, hot bath. Keep awake and
Laudanum. } moving at any cost.
Paregoric. }
Soothing Powders or Syrups. }

Strychnine. } Mustard and water. Sulphate of Zinc.
Tinct. of Nux Vomica. } Absolute quiet. Plug the ears.

Interest Laws of all the States.

STATES AND TERRITORIES.	PENALTY OF USURY.	Legal.	Special.
Alabama	Loss of interest.....	8	No limit.
Arizona	No penalty.....	10	No limit.
Arkansas	Forfeiture of principal and interest.	6	10 per ct.
California.....	No penalty.....	7	No limit.
Colorado	No penalty.....	10	No limit.
Connecticut.....	No penalty.....	6	6 per ct.
Dakota	Forfeiture of contract.....	7	12 per ct.
Delaware.....	Forfeiture of contract.....	6	6 per ct.
Dist. of Columbia	Forfeiture of all interest.....	6	10 per ct.
Florida	No penalty.....	8	No limit.
Georgia	Forfeiture of excess.....	7	8 per ct.
Idaho	Forfeiture of 3 times excess of interest..	10	18 per ct.
Illinois	Forfeiture of all interest.....	6	8 per ct.
Indiana.....	Forfeiture of interest over 6 per cent.....	6	8 per ct.
Iowa	Forfeiture of interest and costs.....	6	10 per ct.
Kansas.....	Forfeiture of excess over 12 per cent.....	7	12 per ct.
Kentucky.....	Forfeiture of excess.....	6	6 per ct.
Louisiana.....	Forfeiture of interest.....	5	8 per ct.
Maine	No penalty.....	6	No limit.
Maryland.....	Forfeiture of excess.....	6	6 per ct.
Massachusetts.....	No penalty—6 per cent. on judgments.....	6	No limit.
Michigan	Forfeiture of excess.....	7	10 per ct.
Minnesota.....	Forfeiture of contract.....	7	10 per ct.
Mississippi.....	Forfeiture of all interest.....	6	10 per ct.
Missouri.....	Forfeiture of all interest.....	6	10 per ct.
Montana	No penalty.....	10	No limit.
Nebraska.....	Forfeiture of all interest and costs.....	7	10 per ct.
Nevada	No penalty.....	10	No limit.
New Hampshire.....	Forfeiture of 3 times excess of interest..	6	6 per ct.
New Jersey.....	Forfeiture of all interest.....	6	6 per ct.
New Mexico.....	No penalty.....	6	12 per ct.
New York.....	Forfeiture of contract.*	6	6 per ct.
North Carolina.....	Forfeiture of double amount of interest.	6	8 per ct.
Ohio	Forfeiture of excess.....	6	8 per ct.
Oregon.....	Forfeiture of principal, int. and costs...	8	10 per ct.
Pennsylvania.....	Forfeiture of excess, Act of 1858.....	6	6 per ct.
Rhode Island.....	Forfeiture, unless by contract*.....	6	No limit.
South Carolina.....	Forfeiture of interest.....	7	10 per ct.
Tennessee.....	Forfeiture of over 6 per cent.....	6	6 per ct.
Texas.....	Forfeiture of interest.....	8	12 per ct.
Utah.....	No penalty.....	10	No limit.
Vermont.....	Forfeiture of excess.....	6	7 per ct.
Virginia.....	Forfeiture of excess.....	6	6 per ct.
Washington.....	No penalty.....	10	No limit.
West Virginia.....	Forfeiture of excess.....	6	6 per ct.
Wisconsin.....	Forfeiture of all interest.....	7	10 per ct.
Wyoming.....	No penalty.....	12	No limit.

*Also punishable as a misdemeanor. Banks forfeit interest only, or double the interest if charged in advance.

†Also 6 per ct. on judgments.

Values in U. S. Money of the Pure Gold or Silver

REPRESENTING RESPECTIVELY THE MONETARY UNITS AND STANDARD COINS OF FOREIGN COUNTRIES.

The estimates of values contained in the following table are those made by the Director of the Mint, January 1st, 1890, in compliance with the provisions of law as stated below.

COUNTRY.	MONETARY UNIT.	STANDARD.	VALUE.
Argentine Republic...	Peso	Gold & Silver.	D. O. M. 0 96 5
Austria	Florin	Silver	0 34 3
Belgium	Franc	Gold & Silver.	0 19 3
Bolivia.....	Boliviano	Silver	0 69 8
Brazil	Milreis of 1000 reis..	Gold	0 54 6
British America.....	Dollar.....	Gold.	1 0 0
Central American States	Peso.....	Silver	0 69 8
Chili	Peso.....	Gold & Silver.	0 91 2
China	Tael ... { Shanghai.. Haikwan.. (Customs).	Silver	1 3 1 1 14 8
Cuba	Peso	Gold & Silver.	0 92 6
Denmark.....	Crown	Gold	0 26 8
Ecuador	Sucré	Silver.....	0 69 8
Egypt	Pound (100 piastres).	Gold	4 94 8
France	Franc.....	Gold & Silver.	0 19 3
German Empire	Mark	Gold.	0 23 8
Great Britain	Pound sterling.....	Gold	4 86 6½
Greece.....	Drachma	Gold & Silver.	0 19 3
Hayti.	Gourde	Gold & Silver.	0 96 5
India	Rupée of 16 annas..	Silver.....	0 33 2
Italy	Lira.....	Gold & Silver.	0 19 3
Japan	Yen	Gold	0 99 7
Japan	Yen	Silver	0 75 2
Liberia	Dollar.....	Gold	1 0 0
Mexico	Dollar.....	Silver.....	0 75 8
Netherlands	Florin.....	Gold & Silver.	0 40 2
Norway	Crown.....	Gold	0 26 8
Peru	Sol	Silver.....	0 69 8
Portugal.....	Milreis of 1000 reis..	Gold	1 8 0
Russia	Roubl. of 100 cop'ks.	Silver.....	0 55 8
Spain	Peseta of 100 centim.	Gold & Silver.	0 19 3
Sweden	Crown.....	Gold	0 26 8
Switzerland.....	Franc.....	Gold & Silver.	0 19 3
Tripoli	Mahbub of 20 piast's	Silver.....	0 62 9
Turkey.....	Piastre	Gold	0 4 4
U. S. of Colombia.....	Peso.....	Silver	0 69 8
Venezuela	Bolivar.....	Silver.....	0 14 0

The first section of the Act of March 3, 1873, provides "that the value of Foreign Coin, as expressed in the money of account of the

United States, shall be that of the pure metal of such coin of standard value," and that "the values of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the first day of January by the Secretary of the Treasury."

Canals—Their Length and Cost.

The following table comprises the canals of the United States and Canada of which the cost has exceeded \$1,000,000 each:

NAME.	State.	Length in miles.	Cost.
Erie.....	New York.	363	\$7,143,789
Champlain.....	"	63	1,257,604
Chenango.....	"	97	2,419,956
Central Division, public.....	Penna.....	173	5,307,252
Western ".....	".....	104	3,096,523
Susquehanna Division, public.....	".....	39	1,039,256
N. Branch ".....	".....	73	1,096,178
N. Branch Extension, ".....	".....	90	3,528,303
Delaware Division, ".....	".....	60	1,275,715
Schuylkill "..... private.....	".....	108	2,500,176
Lehigh ".....	".....	85	4,455,099
Union ".....	".....	82	.....
Del. and Hudson.....	N. Y. & Pa.	108	2,500,000
" " enlarged.....	"	108	6,500,000
Del. and Raritan feeder.....	New Jersey.	43	2,844,103
Morris and Essex.....	"	101	3,100,000
Chesapeake and Delaware.....	Del. & Md.	13½	2,750,000
Chesapeake and Ohio.....	Maryland..	191	10,000,000
Ohio and Erie.....	Ohio.....	307	4,695,824
Miami.....	".....	178	3,750,000
Sandy and Beaver.....	".....	76	1,500,000
James River and Kanawha.....	Virginia....	147	5,020,050
Wabash and Erie.....	Indiana.....	379	.....
" ".....	".....	90	3,057,120
Illinois and Michigan.....	Illinois.....	102	8,654,337
Welland.....	Canada.....	36	7,000,000
St. Lawrence.....	".....	10	1,000,000
Cornwall.....	".....	12	2,000,000
Beauharnois.....	".....	11	1,500,000
Lachine.....	".....	8½	2,000,000
Harlem River Ship Canal.....	New York.....	.....	2,700,000

Domestic Postage.

FIRST CLASS.—Letters and all written matter, whether sealed or unsealed, and all other matter sealed, nailed, sewed, tied, or fastened in any manner, so that it can not be easily examined, **two cents per ounce** or fraction thereof. A "Special Delivery" ten-cent stamp, when attached to a letter in addition to the lawful postage, shall entitle the letter to immediate delivery at, or within one mile of, any post-office. Postal cards, one cent each; with paid reply, two cents.

SECOND CLASS.—All regular newspapers, magazines, and other periodicals issued at intervals not exceeding three months; the postage is **one cent for each four ounces**, payable by postage stamps.

THIRD CLASS.—Embraces **printed books**, pamphlets, circulars, engravings, lithographs, proof-sheets and manuscript accompanying the same, and all matter of the same general character, and not having the character of personal correspondence. Circulars produced by hektograph or similar process, or by electric pen, are rated as third class. The limit of weight for mail matter of the third class is four pounds, except in the case of single books exceeding that weight. The rate of postage on mail matter of the third class is **one cent for each two ounces** or fraction thereof.

FOURTH CLASS.—All mailable matter not included in the three preceding classes, which is so prepared for mailing as to be easily taken from the wrapper and examined. Rate, **one cent per ounce** or fraction thereof, except seeds, roots, cuttings, bulbs, plants and scions, which are one cent per two ounces. Limit of weight, 4 lbs. Full prepayment compulsory. Liquids, and other like injurious matter, not admitted, except under conditions which may be learned at any post-office.

Direct your mail matter to a post-office, writing the name of the *State* plainly; and if to a city, add the street and number or post-office box of the person addressed. Matter not addressed to a post-office can not be forwarded. Write or print your name and address and the contents, if a package, upon the upper left-hand corner of all mail matter. This will insure its immediate return to you for correction, if improperly addressed or insufficiently paid; and if it is not called for at destination, it can be returned to you without going to the Dead Letter office. If a letter, it will be returned free. Register all valuable letters and packages. **Registry fee, eight cents**, which, with the postage, must be fully prepaid.

FEES CHARGED FOR MONEY ORDERS.—For Money Orders in denominations of \$100 or less, the following fees are charged: For Orders for sums not exceeding \$3.50, 3 cents; \$3.50 to \$5, 5 cents; \$5 to \$10, 8 cents; \$10 to \$20, 10 cents; \$20 to \$30, 12 cents; \$30 to \$40, 15 cents; \$40 to \$50, 18 cents; \$50 to \$60, 20 cents; \$60 to \$75, 25 cents; \$75 to \$100, 30 cents.

The big trees (redwoods) of Calaveras County, Cal., are ninety-two in number, ten being thirty feet in diameter. They range in height from 150 to 237 feet, and are from 1,000 to 3,500 years of age.

Foreign Postage.

To all Foreign Countries (except Canada and Mexico):

On letters, **five cents for each half ounce** or fraction thereof—prepayment optional. Double rates are collected on delivery of unpaid or short-paid letters.

On newspapers, books, pamphlets, photographs, sheet music, maps, engravings, and similar printed matter, **one cent for each two ounces** or fraction thereof.

To CANADA (including Nova Scotia, New Brunswick, Manitoba, and Prince Edward Island): **LETTERS, two cents for each ounce** or fraction thereof; Books, Circulars, and similar printed matter, **one cent for each two ounces** or fraction thereof; **SECOND CLASS MATTER**, same as in the United States; Samples, 1 cent per two ounces (must be paid at least 2 cents); **MERCHANDISE, one cent per ounce**. Packages must not exceed 4 lbs. 6 oz. in weight—prepayment compulsory.

To MEXICO: Letters, Postal Cards and printed matter same rates as in the United States. **SAMPLES, one cent per two ounces**; **MERCHANDISE** other than Samples can only be sent by Parcel Post.

LIMITS OF SIZE AND WEIGHT: Packages of samples of merchandise to the countries named above (except Great Britain, France, Belgium and Switzerland) must not exceed $8\frac{1}{2}$ ozs., nor measure more than 12 in. in length, 8 in breadth and 4 in depth; and packages of printed matter must not exceed 4 lbs. 6 ozs. Packages of merchandise samples to Great Britain, France, Belgium, Switzerland, Italy, Austria, Hawaii and Argentine Republic are limited to 12 ozs. in weight, 12 in. in length, 8 in width and 4 in depth. Packages of printed matter to Germany and Great Britain are limited to 2 ft. in length and 1 ft. in each other dimension.

INTERNATIONAL OR FOREIGN MONEY-ORDER FEES.

On Algeria, Austria, Belgium, British India, Cape Colony, Constantinople, Denmark, Dominion of Canada, Egypt, England, France, German Empire, Hong Kong, Ireland, Italy, Jamaica, Japan, Netherlands, Newfoundland, New South Wales, New Zealand, Norway, Portugal, Sandwich Islands, Scotland, Shanghai, Sweden, Switzerland, Tasmania, Victoria:

For Orders for sums of \$10 or less.....	10 cents.
Over \$10 and not exceeding \$20.....	20 cents.
Over 20 and not exceeding 30.....	30 cents.
Over 30 and not exceeding 40.....	40 cents.
Over 40 and not exceeding 50.....	50 cents.
Over 50 and not exceeding 60.....	60 cents.
Over 60 and not exceeding 70.....	70 cents.
Over 70 and not exceeding 80.....	80 cents.
Over 80 and not exceeding 90.....	90 cents.
Over 90 and not exceeding 100.....	\$1.00

East Indies and Egypt by remittance through the London Exchange Office.

States and Territories.

STATES AND TERRITORIES.	Square Miles.	When Settled.	Admitted.	Population in 1882.	Elec'l Vote.
1. Alabama	52,250	1711	1819	1,565,000	11
2. Arkansas	53,850	1685	1836	1,195,000	8
3. California	158,360	1768	1850	1,286,000	9
4. Colorado	103,925	1806	1876	478,000	4
5. Connecticut	4,990	1635	1789	776,000	6
6. Delaware	2,050	1638	1787	173,000	3
7. Florida	58,680	1565	1845	420,000	4
8. Georgia	59,475	1733	1789	1,898,000	13
9. Idaho	84,800	1860	1890	100,000	3
10. Illinois	56,650	1682	1818	3,975,000	24
11. Indiana	36,350	1702	1816	2,284,000	15
12. Iowa	56,025	1788	1837	1,964,000	13
13. Kansas	82,080	1719	1861	1,480,000	10
14. Kentucky	40,400	1787	1792	1,888,000	13
15. Louisiana	48,720	1699	1812	1,156,000	8
16. Maine	33,040	1635	1820	664,000	6
17. Maryland	12,210	1684	1789	1,059,000	8
18. Massachusetts	8,315	1620	1789	2,353,000	15
19. Michigan	58,915	1670	1837	2,186,000	14
20. Minnesota	83,365	1819	1858	1,418,000	9
21. Mississippi	46,810	1716	1817	1,326,000	9
22. Missouri	69,415	1764	1821	2,790,000	17
23. Montana	146,080	1860	1889	160,000	3
24. Nebraska	77,510	1854	1867	1,225,000	8
25. Nevada	110,700	1848	1864	44,000	3
26. New Hampshire	9,305	1623	1789	382,000	4
27. New Jersey	7,815	1620	1789	1,522,000	10
28. New York	49,170	1614	1789	6,212,000	36
29. North Carolina	52,250	1650	1789	1,660,000	11
30. North Dakota	68,645	....	1889	223,000	3
31. Ohio	41,060	1788	1802	3,770,000	23
32. Oregon	96,030	1811	1859	352,000	4
33. Pennsylvania	45,215	1638	1789	5,497,000	32
34. Rhode Island	1,250	1636	1790	360,000	4
35. South Carolina	30,570	1690	1789	1,181,000	9
36. South Dakota	79,800	....	1889	386,000	4
37. Tennessee	42,050	1750	1796	1,789,000	12
38. Texas	265,780	1685	1845	2,377,000	15
39. Vermont	9,565	1724	1791	333,000	4
40. Virginia	42,450	1607	1789	1,685,000	12
41. Washington	69,680	1845	1889	410,000	4
42. West Virginia	24,780	1607	1863	784,000	6
43. Wisconsin	56,040	1669	1847	1,771,000	12
44. Wyoming	97,890	1869	1890	74,000	3

States and Territories—(Continued).

STATES AND TERRITORIES.	Square Miles.	When Settled.	Admitted.	Population in 1892.	Elec'l Vote.
45. Utah.....	84,970	1847	1896	223,000	3
Alaska.....Ter..	561,409	1741	....	40,000	....
Arizona..... "	113,020	1582	....	63,000	....
Indian..... "	64,609	1834	....	190,000	....
New Mexico. "	122,580	1582	....	161,000	....
Oklahoma ... "	39,450	1889	....	123,000	....

Facts Worth Knowing.

A teaspoonful of baking soda in a cup of boiling water makes an excellent gargle for sore throat, to be used as hot as you can possibly bear it.

You can drive nails into hard wood without bending them if you dip them first in lard.

Vinegar will "set" dubious greens and blues in gingham.

Vinegar is an antidote for poisoning by alkalies.

Vinegar and brown paper will heal bruise or "black eye."

Vinegar and sugar will make a good stove polish.

Vinegar and salt will strengthen a lame back.

Vinegar used to wash the wall before papering will help the paper to stick.

Vinegar for soaking lamp wicks makes a brilliant light.

Grease may be removed from woolen goods by sponging same with strong cold coffee.

Sprinkling salt on any substance burning on the stove will destroy the odor and smoke.

Cake made with one egg is just as palatable as one made with many, if it is fresh and well baked.

Fine laces may be cleaned by being packed in wheat flour and allowed to remain twenty-four hours.

A bit of charcoal boiled with cabbage destroys the disagreeable odor and renders the cabbage more digestible.

A bit of pepper, rolled in cotton, the whole dipped in alcohol, whiskey or brandy, is an excellent remedy for earache.

Black silk may be renovated by a thorough sponging with stale beer, placed between newspapers, and pressed with hot iron.

Two parts crude oil and one part of turpentine removes white spots from furniture, and makes as good a polish as one can desire to have.

Glass windows were first introduced into England in the eighth century.

Useful Information for Architects and Builders.

NUMBER OF NAILS AND TACKS PER POUND.

NAILS.				TACKS.			
		Size.	No.		Length.		No.
			per lb.				per lb.
6	penny,	fence 2	in. 80	1	oz....	$\frac{1}{2}$ inch.....	16,000
8	"	" 2 $\frac{1}{2}$	" 50	1 $\frac{1}{4}$	"....	3-16 "	10,666
10	"	" 3	" 84	2	"....	$\frac{1}{2}$ "	8,000
12	"	" 3 $\frac{1}{2}$	" 89	2 $\frac{1}{4}$	"....	5-16 "	6,400
8	"	fine 1 $\frac{1}{2}$	" 760	8	"....	$\frac{3}{4}$ "	5,833
8	"	.... 1 $\frac{1}{2}$	" 480	4	"....	7-16 "	4,000
4	"	.... 1 $\frac{1}{2}$	" 300	6	"....	9-16 "	2,666
5	"	.... 1 $\frac{1}{2}$	" 200	8	"....	$\frac{1}{2}$ "	2,000
6	"	.... 2	" 160	10	"....	11-16 "	1,600
7	"	.... 2 $\frac{1}{2}$	" 128	12	"....	$\frac{1}{2}$ "	1,333
8	"	.... 2 $\frac{1}{2}$	" 93	14	"....	13-16 "	1,142
9	"	.... 2 $\frac{1}{2}$	" 72	16	"....	$\frac{1}{2}$ "	1,000
10	"	.... 3	" 60	18	"....	15-16 "	888
12	"	.... 3 $\frac{1}{2}$	" 44	20	"....	1 "	800
16	"	.... 3 $\frac{1}{2}$	" 32	22	"....	1 1-16 "	727
20	"	.... 4	" 24	24	"....	1 $\frac{1}{2}$ "	666
30	"	.... 4 $\frac{1}{2}$	" 18				
40	"	.... 5	" 14				
50	"	.... 5 $\frac{1}{2}$	" 12				

1,000 shingles, laid 4 inches to the weather, will cover 100 square feet of surface, and 5 lbs. of shingle nails will fasten them on.

One-fifth more siding and flooring is needed than the number of square feet of surface to be covered, because of the lap in the siding and matching.

1,000 laths will cover 70 yards of surface, and 11 lbs. of lath nails will nail them on; 8 bushels of good lime, 16 bushels of sand, and 1 bushel of hair, will make enough good mortar to plaster 100 square yards.

A cord of stone, 3 bushels of lime, and a cubic yard of sand, will lay 100 cubic feet of wall.

Five courses of brick will lay 1 foot in height on a chimney; 16 bricks in a course will make a flue 4 ins. wide and 12 ins. long, and 8 bricks in a course will make a flue 8 ins. wide and 16 ins. long.

Cement 1 bush. and sand 2 bush. will cover 8 $\frac{1}{2}$ sq. yds. 1 inch thick, 4 $\frac{1}{2}$ sq. yds. $\frac{3}{4}$ inch thick, and 6 $\frac{1}{2}$ sq. yds. $\frac{1}{2}$ inch thick; 1 bush. cement and 1 of sand will cover 2 $\frac{1}{2}$ sq. yds. 1 inch thick, 8 sq. yds. $\frac{3}{4}$ inch thick, and 4 $\frac{1}{2}$ sq. yds. $\frac{1}{2}$ inch thick.

Quantity of Bricks Required to Construct a Building.

Superficial Feet of Wall.	Number of Bricks to Thickness of					
	4 inch.	8 inch.	12 inch.	16 inch.	20 inch.	24 inch.
1.....	7	15	22	29	37	45
2.....	15	30	45	60	75	90
3.....	23	45	68	90	113	135
4.....	30	60	90	120	150	180
5.....	38	75	113	150	188	225
6.....	45	90	135	180	225	270
7.....	53	105	158	210	263	315
8.....	60	120	180	240	300	360
9.....	68	135	203	270	338	405
10.....	75	150	225	300	375	450
20.....	150	300	450	600	750	900
30.....	225	450	675	900	1,125	1,350
40.....	300	600	900	1,200	1,500	1,800
50.....	375	750	1,125	1,500	1,875	2,250
60.....	450	900	1,350	1,800	2,250	2,700
70.....	525	1,050	1,575	2,100	2,625	3,150
80.....	600	1,200	1,800	2,400	3,000	3,600
90.....	675	1,350	2,025	2,700	3,375	4,050
100.....	750	1,500	2,250	3,000	3,750	4,500
200.....	1,500	3,000	4,500	6,000	7,500	9,000
300.....	2,250	4,500	6,750	9,000	11,250	13,500
400.....	3,000	6,000	9,000	12,000	15,000	18,000

Kerosene and Ammonia.

Kerosene is a good counter-irritant.

Kerosene will remove rust from bolts and bars.

Kerosene will remove fresh paint.

Kerosene will remove tar.

Kerosene on a cloth will prevent flat-irons from scorching.

Kerosene cleans brass, but it should be afterwards wiped with dry whiting.

A solution of ammonia cleanses sinks and drain-pipes.

Ammonia takes finger marks from paint.

Ammonia in dish-water brightens silver.

Ammonia in water keeps flannels soft.

Ammonia is good in washing lace and fine muslin.

Ammonia cleanses hair brushes.

Ammonia bleaches yellow flannels.

Ammonia brightens windows and looking-glasses.

Cost of Tin Roofing per Square and per Square Foot.

The following table shows the cost per square and per square foot of tin roofing, laid with 14x20 tin, with tin at any price from \$4 to \$10 per box. The first column contains the price per box of tin; the second column shows the cost of tin per square (100 square feet) of surface, and the third column shows the cost of tin per square foot of surface:

FLAT SEAM ROOFING—COST WITH 14x20 TIN.

Price of Tin per box.	Cost per square of flat roof 14x20 Tin.	Cost per sq. foot.	Price of Tin per box.	Cost per square of flat roof 14x20 Tin.	Cost per sq. foot.
\$4.25.....	\$2.21 .....	.0221	\$8.25.....	\$4.29 .....	.0429
4.50	2.34 .....	.0234	8.50	4.42 .....	.0442
4.75	2.47 .....	.0247	8.75	4.55 .....	.0455
5.00	2.60 .....	.0260	9.00	4.68 .....	.0468
5.25	2.73 .....	.0273	9.25	4.81 .....	.0481
5.50	2.86 .....	.0286	9.50	4.94 .....	.0494
5.75	2.99 .....	.0299	9.75	5.07 .....	.0507
6.00	3.12 .....	.0312	10.00	5.20 .....	.0520
6.25	3.25 .....	.0325	10.25	5.33 .....	.0533
6.50	3.38 .....	.0338	10.50	5.46 .....	.0546
6.75	3.51 .....	.0351	10.75	5.59 .....	.0559
7.00	3.64 .....	.0364	11.00	5.72 .....	.0572
7.25	3.77 .....	.0377	11.25	5.85 .....	.0585
7.50	3.90 .....	.0390	11.50	5.98 .....	.0598
7.75	4.03 .....	.0403	11.75	6.11 .....	.0611
8.00	4.16 .....	.0416	12.00	6.24 .....	.0624

STANDING SEAM ROOFING—COST WITH 14x20 TIN.

Price of Tin per box.	Cost per square of standing seam roof with 14x20 Tin.	Cost per sq. foot.	Price of Tin per box.	Cost per square of standing seam roof with 14x20 Tin.	Cost per sq. foot.
\$4.25.....	\$2.37 .....	.0237	\$7.25.....	\$4.08 .....	.0408
4.50	2.51 .....	.0251	7.50	4.17 .....	.0417
4.75	2.65 .....	.0265	7.75	4.31 .....	.0431
5.00	2.79 .....	.0279	8.00	4.45 .....	.0445
5.25	2.93 .....	.0293	8.25	4.59 .....	.0459
5.50	3.06 .....	.0306	8.50	4.73 .....	.0473
5.75	3.20 .....	.0320	8.75	4.87 .....	.0487
6.00	3.34 .....	.0334	9.00	5.01 .....	.0501
6.25	3.48 .....	.0348	9.25	5.15 .....	.0515
6.50	3.62 .....	.0362	9.50	5.29 .....	.0529
6.75	3.76 .....	.0376	9.75	5.43 .....	.0543
7.00	3.90 .....	.0390	10.00	5.57 .....	.0557

Cost of Tin Roofing per Square—(Continued).

FLAT SEAM ROOFING—COST WITH 20x28 TIN.

Price of Tin per box.	Cost per square of flat roof 20x28 Tin.	Cost per sq. foot.	Price of Tin per box.	Cost per square of flat roof 20x28 Tin.	Cost per sq. foot.
\$8.00.....	\$2.01.....	.0201	\$16.00.....	\$4.01.....	.0401
8.50.....	2.13.....	.0213	16.50.....	4.13.....	.0413
9.00.....	2.26.....	.0226	17.00.....	4.26.....	.0426
9.50.....	2.38.....	.0238	17.50.....	4.38.....	.0438
10.00.....	2.51.....	.0251	18.00.....	4.51.....	.0451
10.50.....	2.63.....	.0263	18.50.....	4.63.....	.0463
11.00.....	2.76.....	.0276	19.00.....	4.76.....	.0476
11.50.....	2.88.....	.0288	19.50.....	4.88.....	.0488
12.00.....	3.00.....	.0300	20.00.....	5.01.....	.0501
12.50.....	3.13.....	.0313	20.50.....	5.13.....	.0513
13.00.....	3.25.....	.0325	21.00.....	5.26.....	.0526
13.50.....	3.38.....	.0338	21.50.....	5.38.....	.0538
14.00.....	3.50.....	.0350	22.00.....	5.51.....	.0551
14.50.....	3.63.....	.0363	22.50.....	5.63.....	.0563
15.00.....	3.75.....	.0375	23.00.....	5.76.....	.0576
15.50.....	3.88.....	.0388			

STANDING SEAM ROOFING—COST WITH 20x28 TIN.

Price of Tin per box.	Cost per square of standing seam roof with 20x28 Tin.	Cost per sq. foot.	Price of Tin per box.	Cost per square of standing seam roof with 20x28 Tin.	Cost per sq. foot.
\$8.00.....	\$2.15.....	.0215	\$16.50.....	\$4.42.....	.0442
8.50.....	2.28.....	.0228	17.00.....	4.56.....	.0456
9.00.....	2.41.....	.0241	17.50.....	4.69.....	.0469
9.50.....	2.55.....	.0255	18.00.....	4.82.....	.0482
10.00.....	2.68.....	.0268	18.50.....	4.96.....	.0496
10.50.....	2.82.....	.0282	19.00.....	5.09.....	.0509
11.00.....	2.95.....	.0295	19.50.....	5.23.....	.0523
11.50.....	3.09.....	.0309	20.00.....	5.36.....	.0536
12.00.....	3.21.....	.0321	20.50.....	5.49.....	.0549
12.50.....	3.35.....	.0335	21.00.....	5.63.....	.0563
13.00.....	3.48.....	.0348	21.50.....	5.76.....	.0576
13.50.....	3.62.....	.0362	22.00.....	5.90.....	.0590
14.00.....	3.75.....	.0375	22.50.....	6.03.....	.0603
14.50.....	3.89.....	.0389	23.00.....	6.17.....	.0617
15.00.....	4.02.....	.0402	23.50.....	6.30.....	.0630
15.50.....	4.15.....	.0415	24.00.....	6.43.....	.0643
16.00.....	4.29.....	.0429			

TABLE

Showing the requisite sizes of girders and joists for warehouses, the span and distance apart being given:

Distance apart.	SPAN OF GIRDERS.				Joists.	REMARKS.
	6 Feet.	8 Feet.	10 Feet.	12 Feet.		
Feet.	Inches.	Inches.	Inches.	Inches.	Inches.	
10	8x12	12x13	12x16	14x18	24x10	Girders to have a bearing at each end and joists six inches.
12	9x12	12x14	12x18	16x18	3 x10	
14	10x12	12x15	14x18	.....	3 x12	

Table

Showing quantity of lumber in every four lineal feet of partition, studs being placed 16 centers, waste included:

Height of partition. Feet.	Quantity of Studs 2x4. Feet.	If 2x6. Feet.
8	20	30
9	23	34
10	26	38
11	29	42
12	32	46
13	35	51
14	38	55
15	41	59
16	44	64

Builders' Estimating Tables.

Table showing quantity of material in every four lineal feet of exterior wall in a balloon frame building, height of wall being given:

Length of Studs.	Size of Sills.	Size of Studs, Braces, etc.	Quantity of Rough Lumber.	Quantity of Inch Boarding.	Siding in sup. feet.	Tar Paper in sup. feet.
8	6x 6	2x4 studs.	42	36	40	74
10	6x 8	4x4 braces.	52	44	50	80
12	6x10	4x4 plates.	62	53	60	96
14	6x10	1x6 ribbons.	69	62	70	112
16	8x10		82	71	80	128
18	8x10	studs	87	80	90	144
20	8x12	16 inches from centers.	98	88	100	160
22	9x12		109	97	110	176
24	10x12		119	106	120	192
18	10x10	2x6 studs.	122	80	90	144
20	10x12	6x6 braces.	137	88	100	160
22	10x12	4x6 plates.	145	97	110	176
24	12x12	1x6 ribbons.	162	106	120	192
26	10x14		169	114	130	208
28	10x14	studs 16 inch centers.	176	123	140	224
30	12x14		198	132	150	246

Table showing amount of lumber in rafters, collar-piece and boarding, and number of shingles to four lineal feet of roof, measured from eave to eave over ridge. Rafters 16-inch centre:

Width of House. Feet	Size of Rafters.	Size of Collar-piece.	Quantity of Lumber in Rafter and Collar-piece.	Quantity of Boarding Feet.	No. of Shingles
14	2x4	2x4	39	91	560
16	2x4	2x4	45	70	640
18	2x4	2x4	50	79	720
20	2x4	2x4	56	88	800
22	2x4	2x4	62	97	880
24	2x4	2x4	67	106	960
20	2x6	2x6	84	88	800
22	2x6	2x6	92	97	880
24	2x6	2x6	101	106	960
26	2x6	2x6	109	115	1040
28	2x6	2x6	117	124	1120
30	2x6	2x6	126	133	1200

Shingles Required in a Roof.

To the square foot it takes 9 if exposed four inches; 8 if exposed $4\frac{1}{2}$ inches, and 7 1 5 if exposed 5 inches to the weather.

Find the number of shingles required to cover a roof 38 ft. long, and the rafters on each side 14 ft. Shingles exposed $4\frac{1}{2}$ inches.

$$28 \times 38 = 1064 \text{ (sq. ft.)} \times 8 = 8512 \text{ shingles.} \quad \text{Ans.}$$

To find the length of rafters, giving the roof *one-third* pitch, take *three-fifths* of the width of the building. If the building is 30 feet wide, they must be 18 feet long, exclusive of projection.

The following very useful and practical calculations will be found exceedingly handy, as guides to the builder, in making up his figures when he is called upon to estimate for all portions of a job, many of which are not entirely in his own particular line:

Carpenters', Plasterers' and Bricklayers' Work.

To find how many square yards in a floor or wall: *multiply the length by the width or height, and divide the product by 9.*

How many square yards in a floor 18 ft. $14 \times 18 = 252$ sq. feet. long and 14 ft. wide; and how many yards 9 $252 \div 9 = 28$ sq. yds. of carpet $\frac{1}{2}$ yd. wide, will it take?

To divide by a fraction, multiply the number by the *denominator*, and divide the product by the *numerator*.

To multiply by a fraction, multiply by $\frac{3}{4}$ $112 \times \frac{3}{4} = 84$ yds. carpet. the *numerator* and divide by the *denominator*. } Ans. 28 sq. yds. $37\frac{1}{2}$ yds. carpet.

Find how many square yards in $76 \times 11 = 836$ sq. ft. in four walls. the four walls and ceiling of a $18 \times 20 = 360$ sq. ft. in ceiling. room 18 by 20, 11 ft. high; and the cost of plastering the same at 15 cts. per sq. yd.

The length of the *four* walls is (twice 20 and twice 18) 76 feet, which multiplied by the height gives the sq. ft. in the walls. The length multiplied by the width gives the sq. ft. in the ceiling.

MASON WORK—BRICK.

$1\frac{1}{2}$ barrels lime and $\frac{1}{2}$ yard sand will lay 1,000 brick.

One man with $1\frac{1}{2}$ tenders will lay 1,800 to 2,000 brick per day.

RUBBLE.

$1\frac{1}{2}$ barrels lime and 1 yard of sand will lay 100 feet of stone.

One man will lay 150 feet of stone per day with one tender.

CEMENT.

$1\frac{1}{2}$ barrels cement and $\frac{1}{2}$ yard sand will lay 100 feet rubble stone.
 same time as to mason and tender as rubble.

NUMBER OF NAILS REQUIRED IN CARPENTER'S WORK.

To case and hang one door, 1 lb.
 To case and hang one window, $\frac{1}{2}$ lb.
 Base, 100 lineal feet, 1 lb.
 To put on rafters, joists, etc., 3 lbs. to 1,000 feet.
 To put up studding, same.
 To lay a 6-inch pine floor, 15 lbs. to 1,000 feet.

LABOR.

To place joists, etc., on wall, \$4 per 1,000.
 Put up jambs and case a door, \$1.50.
 Hanging door and locking, 50c. to 75c.
 Fitting sash, 50c. to 75c.
 Casing window, stool and apron, \$1.00.
 Hang outside blinds, 50c.
 Hang inside blinds, 75c.; if boxed, \$1.00.
 Lay pine floor, 6 in., 30c. per square.
 Lay pine floor, 4 in., 40c. per square.
 Lay walnut floor, 3 in., \$1 per square.
 Roof and sheathing, 25c. per square.
 To lay shingles, per 1,000, 75c. per square.

COST OF PAINTERS' WORK.

1 coat shellac, 50c. per square.
 1 coat lead and oil, 75c. per square.
 2 coats lead and oil, \$1.50 per square.
 3 coats lead and oil, \$2.50 per square.
 Sanding, 1 coat, 75c. per square.
 Grain oak, 2 coats, \$2.50 per square.
 Grain walnut, 2 coats, \$3.00 per square.
 To set glass, 10 per cent. of cost.
 Calcimining, 60c. to 75c. per square.
 1 coat varnish, 50c. per square.

Floor, Wall and Roof Measure.

To find the number of square yards in a floor or wall: **RULE—**
 Multiply the length by the width or height (in feet) and divide the product by 9; the result will be square yards.

ESTIMATES OF MATERIALS.

$\frac{3}{4}$ barrels of lime will do 100 square yards plastering, two coats.
 2 " " " " 100 " " " " one coat.
 $1\frac{1}{2}$ bushels of hair " 100 " " " "
 14 yards good sand " 100 " " " "
 $\frac{1}{4}$ barrel of plaster (stucco) will hard-finish 100 square yards plastering.
 1 barrel of lime will lay 1,000 bricks. (It takes good lime to do it.)
 2 barrels of lime will lay 1 cord rubble stone.

$\frac{1}{2}$ barrel of lime will lay 1 perch rubble stone. (Estimating $\frac{1}{2}$ cord to perch.)

To every barrel of lime estimate about $\frac{1}{2}$ yards of good sand for plastering and brick work.

To measure square timbers: *Multiply the length, width and thickness together, and divide the product by 12.*

How many square feet in a joist 2 by 8, 18 ft. long?

$$2 \times 8 \times 18 = 288 \div 12 = 24 \text{ ft. Ans.}$$

$$\text{Sill 8 by 8, 22 ft. long? } 8 \times 8 \times 22 = 1408 \div 12 = 117\frac{1}{3} \text{ ft. Ans.}$$

Amount of Paint Required for a Given Surface.

It is impossible to give a rule that will apply in all cases, as the amount varies with the kind and thickness of the paint, the kind of wood or other material to which it is applied, the age of the surface, etc. The following is an approximate rule: Divide the number of square feet of surface by 200. The result will be the number of gallons of liquid paint required to give two coats; or, divide by 18 and the result will be the number of pounds of pure ground white lead required to give three coats.

Amount of Barbed Wire Required for Fences.

Estimated number of pounds of barbed wire required to fence space or distances mentioned, with one, two or three lines of wire, based upon each pound of wire measuring one rod ($16\frac{1}{2}$ feet).

	1 Line.	2 Lines.	3 Lines.
1 square acre.....	50 $\frac{1}{2}$ lbs.	101 $\frac{1}{2}$ lbs.	152 lbs.
1 side of a square acre.	12 $\frac{1}{2}$ lbs.	25 $\frac{1}{2}$ lbs.	38 lbs.
1 square half-acre.....	36 lbs.	72 lbs.	108 lbs.
1 square mile.....	1280 lbs.	2560 lbs.	3840 lbs.
1 side of square mile.....	320 lbs.	640 lbs.	960 lbs.
1 rod in length.....	1 lb.	2 lbs.	3 lbs.
100 rods in length.....	100 lbs.	200 lbs.	300 lbs.
100 feet in length.....	6 1-16 lbs.	12 $\frac{1}{2}$ lbs.	18 3-16 lbs.

Yards of Wire per Bundle.

Wires all weigh 63 lbs. to the bundle.

Wire Gauge.	Yards in Bundle.	Wire Gauge.	Yards in Bundle.
No. 0.....	71	No. 11.	529
" 1.....	91	" 12.....	700
" 2.....	105	" 13.....	893
" 3.....	121	" 14.....	1142
" 4.....	143	" 15.....	1468
" 5.....	170	" 16.....	1954
" 6.....	203	" 17.....	2540
" 7.....	239	" 18.....	3150
" 8.....	286	" 19.....	4085
" 9.....	342	" 20.....	4912
" 10.....	420		

Business Laws in Daily Use.

A note dated ahead of its issue is void. It may be dated back at pleasure.

A note made on Sunday is void.

Contracts made on Sunday can not be enforced.

A contract made with a lunatic is void.

A note obtained by fraud or from a person in a state of intoxication can not be collected.

It is a fraud to conceal a fraud.

If a note is lost or stolen, it does not release the maker; he must pay it if the consideration for which it was given and the amount can be proven.

Notes bear interest only when so stated, but by usage of trade they always bear interest from maturity.

The maker of an "accommodation" bill or note (one for which he had received no consideration), having lent his name or credit for the benefit of the holder, is not bound to the person accommodated, but is bound to all other parties precisely as if there was a good consideration.

A note or contract made by a minor is void in some states, and in others is voidable.

One may make a note payable to his own order, and indorse it in blank. He must write his name across the face or back of the note the same as any other indorser. This is transferable by delivery as if made payable to bearer.

After the death of a holder of a bill or note his executor or administrator may transfer it by his indorsement.

The husband who acquires a right to a bill or note which was given to the wife, either before or after marriage, may indorse it.

"Value received" is usually written in a note, but is not necessary. If not written it is presumed by the law or may be supplied by proof.

If the time of payment of a note is not inserted, it is held payable on demand.

The time of payment of a note must not depend upon a contingency. The promise must be absolute.

The payee should be distinctly named in the note, unless it is payable to bearer.

If two or more persons as partners are jointly liable on a note or bill, due notice to one of them is sufficient.

If a note or bill is transferred as security, or even as payment of pre-existing debt, the debt revives if the note is dishonored.

If the letter containing a protest of non-payment be put into the post-office, any miscarriage does not affect the party giving notice.

Notes of protest may be sent either to the residence or to the place of business of the party notified, within 24 hours of its non-payment.

The holder of a note may give notice of protest either to all the previous indorsers, which is the safer method, or only to one of them; in case of the latter, he must select the last indorser, and the last must give notice to the last before him, and so on. Each indorser must

send notice the same day or day following. Neither Sunday nor legal holiday is to be reckoned in computing the time in which notice is to be given.

Joint indorsers of a note must both be notified, unless they are partners, when notice to one is sufficient. But this does not hold where a notice is served on a partner living elsewhere, while none is served on a partner residing in the town where the demand is made.

"Acceptance" applies to bills, and not to notes. It is an engagement on the part of the person on whom the bill is drawn to pay it according to its tenor. The usual way is to write across the face of the bill the word "Accepted," giving date of acceptance.

A bill may be written upon any paper or substitute for it, either with ink or pencil.

An indorsee has a right of action against all whose names were on the bill when he received it.

No consideration is sufficient in law if it be illegal in its nature.

Checks or drafts should be presented during business hours; but in this country, except in the case of banks, the time extends through the day and evening. They should be presented for payment without unreasonable delay.

Principals are responsible for the acts of their agents.

Each individual in a partnership is responsible for the whole amount of the debts of the firm, except in cases of special partnership. The word "Limited" in connection with a firm name indicates that a limitation of responsibility for each member is fixed.

Ignorance of the law excuses no one.

The law compels no one to do impossibilities.

An agreement without consideration is void.

Signatures made with a lead-pencil are good in law.

A receipt for money is not always conclusive.

The acts of one partner bind all the rest.

All claims which do not rest upon a seal or judgment must be sued within six years from the time when they arise.

Part payment of a debt which has passed the time of statutory limitation revives the whole debt, and the claim holds good for another period of six years from the date of such partial payment.

If when a debt is due the debtor is out of the state, the "six years" do not begin to run until he returns. If he afterwards leave the state, the time forward counts the same as if he remained in the state.

An oral agreement must be proved by evidence. A written agreement proves itself. The law prefers written to oral evidence, because of its precision.

How to Kill Grease Spots before Painting.

Wash over smoky or greasy parts with saltpetre, or very thin lime whitewash. If soap-suds are used, they must be washed off thoroughly, as they prevent the paint from drying hard.

Table

Showing the number of days from any day of one month to the same day of any other month in the same year.

From any day of	To the same day of											
	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
January.....	365	31	59	90	120	151	181	212	243	273	304	334
February.....	334	365	28	59	89	120	150	181	212	242	273	303
March.....	306	337	365	31	61	92	122	153	184	214	245	275
April.....	275	306	334	365	30	61	91	122	153	183	214	244
May.....	245	276	304	335	365	31	61	92	123	153	184	214
June.....	214	245	273	304	334	365	30	61	92	122	153	183
July.....	184	215	243	274	304	335	365	31	62	92	123	153
August.....	153	184	212	243	273	304	334	365	31	61	92	122
September.....	122	153	181	212	242	273	303	334	365	30	61	91
October.....	92	123	151	182	212	243	273	304	335	365	31	61
November.....	61	92	120	151	181	212	242	273	304	334	365	30
December.....	31	62	90	121	151	182	212	243	274	304	335	365

METHOD OF USING THE TABLE.—Suppose we wish to find the number of days from March 20th to November 26th. We find March in the vertical column, and November at the top, and at the intersection we find 245, to which adding 6 days, we have 251, the number of days required. The table being constructed for February 28 days, the proper allowance must be made for a leap-year.

What Salt will do.

Salt on the fingers when cleaning fowls, meat or fish will prevent slipping.

Salt thrown on a coal fire when broiling steak will prevent blazing from the dripping fat.

Salt as a gargle will cure soreness of the throat.

Salt in water is the best thing to clean willowware and matting.

Salt in the oven under baking-tins will prevent their scorching on the bottom.

Salt puts out a fire in the chimney.

Salt and vinegar will remove stains from discolored teacups.

Salt and soda are excellent for bee stings and spider bites.

Salt thrown on soot which has fallen on the carpet will prevent stain.

Salt put on ink when freshly spilled on a carpet will help in removing the spot.

Salt in whitewash makes it stick.

Salt thrown on a coal fire which is low will revive it.

Salt used in sweeping carpets keeps out moths.

Wages Table.

Salaries and Wages by the Year, Month, Week, or Day, showing what any Sum from \$20 to \$1600 per Annum is per Month, Week, or Day.

Per Year.	Per Month.	Per Week.	Per Day.	Per Year.	Per Month.	Per Week.	Per Day.
\$20 is	\$1.67	\$0.38	\$0.05	\$280 is	\$23.83	\$5.87	\$0.77
25	2.08	.48	.07	285	23.75	5.47	.78
30	2.50	.58	.08	290	24.17	5.56	.79
35	2.92	.67	.10	295	24.58	5.66	.81
40	3.33	.77	.11	300	25.00	5.75	.83
45	3.75	.86	.12	310	25.83	5.95	.85
50	4.17	.96	.14	320	26.67	6.14	.88
55	4.58	1.06	.15	325	27.08	6.23	.89
60	5.00	1.15	.16	330	27.50	6.33	.90
65	5.42	1.25	.18	340	28.33	6.52	.93
70	5.83	1.34	.19	350	29.17	6.71	.96
75	6.25	1.44	.21	360	30.00	6.90	.99
80	6.67	1.53	.22	370	30.83	7.10	1.01
85	7.08	1.63	.23	375	31.25	7.19	1.03
90	7.50	1.73	.25	380	31.67	7.29	1.04
95	7.92	1.82	.26	390	32.50	7.48	1.07
100	8.33	1.92	.27	400	33.33	7.67	1.10
105	8.75	2.01	.29	425	35.42	8.15	1.16
110	9.17	2.11	.30	450	37.50	8.63	1.23
115	9.58	2.21	.32	475	39.58	9.11	1.30
120	10.00	2.30	.33	500	41.67	9.59	1.37
125	10.42	2.40	.34	525	43.75	10.07	1.44
130	10.83	2.49	.36	550	45.83	10.55	1.51
135	11.25	2.59	.37	575	47.92	11.03	1.58
140	11.67	2.69	.33	600	50.00	11.51	1.64
145	12.08	2.78	.40	625	52.08	11.99	1.71
150	12.50	2.88	.41	650	54.17	12.47	1.78
155	12.92	2.97	.42	675	56.25	12.95	1.85
160	13.33	3.07	.44	700	58.33	13.42	1.92
165	13.75	3.16	.45	725	60.42	13.90	1.99
170	14.17	3.26	.47	750	62.50	14.38	2.05
175	14.58	3.36	.48	775	64.58	14.86	2.12
180	15.00	3.45	.49	800	66.67	15.34	2.19
185	15.42	3.55	.51	825	68.75	15.82	2.26
190	15.83	3.64	.52	850	70.83	16.30	2.33
195	16.25	3.74	.53	875	72.92	16.78	2.40
200	16.67	3.84	.55	900	75.00	17.26	2.47
205	17.08	3.93	.56	925	77.08	17.74	2.53
210	17.50	4.03	.58	950	79.17	18.22	2.60
215	17.92	4.12	.59	975	81.25	18.70	2.67

Wages Table — Continued.

Per Year.	Per Month.	Per Week.	Per Day.	Per Year.	Per Month.	Per Week.	Per Day.
220	18.33	4.23	.60	1000	83.33	19.18	2.74
225	18.75	4.31	.62	1050	87.50	20.14	2.88
230	19.17	4.41	.63	1100	91.67	21.10	3.01
235	19.58	4.51	.64	1150	95.83	22.06	3.15
240	20.00	4.60	.66	1200	100.00	23.01	3.29
245	20.42	4.70	.67	1250	104.17	23.29	3.42
250	20.83	4.79	.69	1300	108.33	24.93	3.56
255	21.25	4.89	.70	1350	112.50	25.89	3.70
260	21.67	4.99	.71	1400	116.67	26.85	3.84
265	22.08	5.08	.73	1450	120.84	27.80	3.98
270	22.50	5.18	.74	1500	125.00	28.77	4.11
275	22.92	5.27	.75	1600	133.34	30.68	4.38

Dates of First Occurrences.

Post offices were first established in 1464.

Printed musical notes were first used in 1473.

The first watches were made in Nuremberg in 1477.

America was discovered in 1492.

The first printing press was set up at Copenhagen in 1493.

Durer gave the world a prophecy of future wood-engraving in 1527.

Jergens set the spinning wheel in motion in 1530.

Modern needles first came into use in 1545.

The first knives were used in England, and the first wheeled carriages in France, in 1559.

Religious liberty was granted to the Huguenots in France in 1562, and was followed by the massacre of St. Bartholomew in 1572.

Cervantes wrote Don Quixote in 1573.

The first newspaper was published in England in 1588.

Telescopes were invented in 1590.

The first printing press in the United States was introduced in 1629.

The first air-pump was made in 1650.

The first newspaper advertisement appeared in 1652.

The first copper cent was coined in New Haven in 1687.

The first steam-engine on this continent came from England in 1753.

The first balloon ascent was made in 1783.

The first society for the Promotion of Christian Knowledge was organized in 1698.

The first attempt to manufacture pins in this country was made soon after the war of 1812.

The first prayer-book of Edward VI. came into use by authority of Parliament on Whit-Sunday, 1549.

Glass windows first introduced into England in the eighth century.

The first steamboat plied the Hudson in 1807.

The first sawmakers' anvil was brought to America in 1819.

The first use of a locomotive in this country was in 1820.

Kerosene was first used for lighting purposes in 1826.

The first horse railroad was built in 1826-7.

The first lucifer match was made in 1829.

The first iron steamship was built in 1830.

— The first steel pen was made in 1830.

Omnibuses were introduced in New York in 1830.

Ships were first "copper-bottomed" in 1837.

Envelopes were first used in 1839.

Anæsthesia was discovered in 1844.

Coaches were first used in England in 1569.

The first steel plate was discovered in 1830.

The Franciscans arrived in England in 1224.

The entire Hebrew Bible was printed in 1488.

Gold was first discovered in California in 1848.

The first telescope was used in England in 1608.

Christianity was introduced into Japan in 1549.

First almanac printed by George Von Furbach in 1460.

Percussion arms were used in the United States Army in 1830.

The first glass factory in the United States was built in 1780.

The first complete sewing-machine was patented by Elias Howe, Jr., in 1846.

The first temperance society in this country was organized in Saratoga county, N. Y., March, 1808.

The first coach in Scotland was brought thither in 1501, when Queen Mary came from France. It belonged to Alexander, Lord Seaton.

The first daily newspaper appeared in 1702. The first newspaper printed in the United States was published in Boston on September 25, 1790.

— The first telegraphic instrument was successfully operated by S. F. B. Morse, the inventor, in 1835, though its utility was not demonstrated to the world until 1842.

The first Union flag was unfurled on the 1st of January, 1776, over the camp at Cambridge. It had thirteen stripes of white and red, and retained the English cross in one corner.

When Captain Cook first visited Tahiti, the natives were using nails of wood, bone, shell and stone. When they saw iron nails, they fancied them to be shoots of some very hard wood, and desirous of securing such a valuable commodity, they planted them in their gardens.

— In 1750 the "shoe-black" came into vogue.

Digestion.**Average time required for the digestion of various articles of food :**

	Hours.	Min.
Apples, sweet (boiled).....	2	30
Barley (boiled).....	2	
Beans, Lima (boiled).....	2	30
Beef (roasted).....	3	
Beef (fried).....	4	
Beef, salt (boiled).....	2	45
Bread.....	3	30
Butter.....	3	30
Cheese.....	3	30
Chicken (fricassee).....	2	40
Custard (baked).....	2	45
Duck (roasted).....	4	
Eggs (raw).....	2	
Eggs (soft-boiled).....	3	
Eggs (hard-boiled).....	3	30
Eggs (fried).....	3	30
Fish, various kinds (raw, boiled, fried)....	2	44
Fowl (roasted).....	4	
Hashed meat and vegetables (warm).....	2	30
Lamb (boiled).....	2	30
Milk (raw).....	2	15
Milk (boiled).....	2	
Mutton (boiled).....	3	
Mutton (roast).....	3	15
Oysters (roast).....	3	15
Oysters (stewed).....	3	30
Pigs' feet, soused (boiled).....	1	
Potatoes (baked).....	2	30
Pork, salt (stewed)....	3	
Pork (roasted).....	3	15
Rice (boiled).....	1	
Sago (boiled).....	1	45
Soup, barley.....	1	30
Soup, chicken, etc. (average).....	3	15
Tripe, soused (boiled).....	1	
Turkey, (roast).....	2	30
Veal (boiled).....	4	
Veal (fried).....	4	30

United States Land Measure and Homestead Law.

A township is 36 sections, each a mile square. A section is 640 acres. A quarter section, half a mile square, is 160 acres. An eighth section half a mile long, north and south, and a quarter of a mile wide, is 80 acres. A sixteenth section, a quarter of a mile square, is 40 acres.

The sections are all numbered 1 to 36, commencing at northeast corner, thus :

6	5	4	3	2	NW NE
					SW SE
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

The sections are all divided in quarters, which are named by the cardinal points, as in section 1. The quarters are divided in the same way. The description of a forty-acre lot would read : The south half of the west half of the southwest quarter of section 1 in township 24, north of range 7 west, or as the case might be ; and sometimes will fall short, and sometimes overrun the number of acres it is supposed to contain.

HOMESTEAD PRIVILEGE.—The laws give to every citizen, and to those who have declared their intention to become citizens, the right to a homestead on SURVEYED lands, to the extent of one-quarter section, or 160 acres, or a half-quarter section, or 80 acres; the former in cases in the class of lower priced lands held by law at \$1.25 per acre, the latter of high priced lands held at \$2.50 per acre, when disposed of to cash buyers. The pre-emption privilege is restricted to heads of families, widows, or single persons over the age of twenty-one.

Every soldier and officer in the army, and every seaman, marine and officer of the navy, during the recent rebellion, may enter 160 acres from either class, and length of time served in the army or navy deducted from the time required to perfect title.

Ancient Geographical Names.

WITH THEIR CORRESPONDING MODERN NAMES.

ANCIENT.	COUNTRIES OF EUROPE.	MODERN.
Scandinavia (sken de-na ve-ah).....	Sweden and Norway.	
Chersonesus Cimbrica (ker-so-ne sus sim bre-kah)....	Jutland, part of Denmark.	
Sarmatia (sar-ma she-ah).....	Poland, part of Russia.	
Britannia (bre-tan ne-ah), or Albion (al be-un).....	Great Britain	
Caledonia (kal-e-do ne-ah)	Scotland.	
Hibernia (hi-ber ne-ah)..	Ireland.	
Germania (ger-ma ne-ah).....	Germany, north of the Danube.	
Gallia (gal le-ah), or Gaul (gawl).....	France and the Netherlands.	
Helvetia (hel-ve she-ah)	Switzerland.	
Hispania (his-pa ne-ah).....	Spain.	
Lusitania (lu-se-ta ne-ah)	Portugal.	
Rhætia (re she-ah)..	Tyrol, &c.	
Vindelicia (vin-de-lish e-ah).....	Part of Bavaria.	
Noricum (nor e-kum).	Part of Bavaria and of Austria.	
Illyricum (il-lir e-kum).....	Part of Austria.	
Pannonia (pan-no ne-ah)	Part of Austria and of Hungary.	
Dacia (da she-ah)	Part of Hungary and of Turkey.	
Mæsia (me ze-ah), Thrace (thras), Macedonia (mas-e-do ne-ah), and Epirus (e-pli rus).....	Part of Turkey.	
Grecia (gre she-ah), Greece (gres)....	Greece and part of Turkey.	
Peloponnesus (pel-o-pon-ne sus).....	The Morea.	

COUNTRIES OF ASIA.

Asia Minor (a she-ah mi nor).....	Natolia, Caramania, &c.
Syria (Sir e-ah), Phœnicia (fe-nish e-ah), Judea (ju-de ah)....	Part of Turkey.
Armenia (ar-me ne-ah), Mesopotamia (mes o-po-ta me-ah)....	Part of Turkey.
Assyria (as-sir e-ah), Babylonia (bab e-lo ne-ah).....	Part of Turkey.
Colchis (kol kis), Iberia (i-be re-ah), and Albania (al-ba ne-ah), Georgia, Mingrelia, and part of Circassia.	
Arabia (a-ra be-ah).....	Arabia.
Persia (per se-ah), Media (me de-ah), Parthia (par the-ah).....	Persia.
Bactria (bak tre-ah).	Afghanistan.
Scythia (sith e-ah).....	Siberia and Tartary.

COUNTRIES OF AFRICA.

Ægypt (e gipt).	Ægypt.	Mauritania (maw-re-ta ne-ah)..	Al-giers, Morocco, &c.
Libya (lib yeh).....	Barca.	Æthiopia (e-the-o pe-ah)...	Nubia,
Africa (af re-kah). Tripoli. Tunis.		Abyssinia, &c.	
Numidia (nu-mid e-ah) Tunis, Al-giers.		Gætulia (je-tu le-ah). Biledulgerid.	

Seas, Gulfs, Straits, and Lakes.

Adriatic (a-dre-at ik) Sea.....	Gulf of Venice.
Ægean (e-ge an) Sea.....	Archipelago.
Aquitanian (ak-we-ta ne-an) Ocean.....	Bay of Biscay.
Arabian (a-ra be-an) Gulf.....	Red Sea.
Argolic (ar-gol ik) Gulf.....	Gulf of Napoli.
Asphaltites (as-fal-ti tez) Lake.....	Dead Sea.
Atlantic (at-lan tik) Ocean.....	Atlantic.
Benacus (be-na kus) Lake.....	Garda.
Bosphorus (bos fo-rus) (Cimmerian—sim-me re-an).....	Strait of Caffa.
Bosphorus (bos fo-rus) (Thracian—thra shan). Strait of Constantinople.	
Brigantinus (brig-an-ti nus) Lake.....	Constance.
Caspian (kas pe an) Sea.....	Caspian.
Codanian (ko-da ne an) Gulf.....	Baltic Sea.
Corinth (kor'inth), Gulf of.....	Gulf of Lepanto.
Eux ine (yuks in) Sea.....	Black Sea.
Galilee (gal i-le), Sea of.....	Tabaria.
Gallic (gal lik) Strait.....	Strait of Dover.
Gallic (gal lik) Gulf.....	Gulf of Lyons.
Gangetic (gan-jet ik) Gulf.....	Bay of Bengal.
Gennesareth (jen-nes a reth) Lake of.....	Tabaria.
Hellespont (hel les-pont).....	Dardanelles.
Hercules (her ku-lez), Strait of.....	Strait of Gibraltar.
Hibernian (hi-ber ne-an) Strait.....	Irish Sea.
Ionian (i-o ne-an) Sea.....	Part of Gulf of Venice.
Larius (la re-us) Lake.....	Como.
Ligustic (le-gus tik) Gulf.....	Gulf of Genoa.
Leman (le man) Lake.....	Geneva.
Mediterranean (med-i ter-ra ne-an).....	Mediterranean.
Palus Mæotis (pa lus me-o tis).....	Sea of Azof.
Propontis (pro-pon tis).....	Marmora.
Saronic (sa-ron ik) Gulf.....	Gulf of Engia.
Sicilian (se-sil yan) Strait.....	Strait of Messina.
Syrtis (sir-tis) Major.....	Gulf of Sidra.
Thermaic (ther-ma ik) Gulf.....	Gulf of Contessa.
Tiberias (ti-be re-as), Sea of.....	Tabaria.
Verbanus (ver ba nus) Lake.....	Maggiore.

Islands.

ANCIENT.	MODERN.	ANCIENT.	MODERN.
Ægina (e-ji nah).....	Ægina.	Baleares (bal-e-a rez), Majorca, Minorca, and Ivica.	
Æolian (e-o le-an) Isl'ds.		Calymna (ka-lim nah).....	Calmina.
	Lipari Isl'ds.	Capraria (ka-pra re-ah).....	Gomera.
Amorgos (a-mor gos).....	Amorgo.	Capræ (ka pre-e).....	Capri.
Anaphe (an a-fe).....	Namphio.	Carpathus (kar pa-thus).....	Scarpanto.
Andros (an dros).....	Andro.		
Aradus (ar a-dus).....	Larek.		

Islands — (Continued).

ANCIENT.	MODERN.	ANCIENT.	MODERN
Cephalenia (sef-a-le ne-ah).	Cefalonia.	Melite (mel i-te).....	Meleda.
Ceos (se os).....	Zia.	Melos (me los).....	Milo.
Chios (ki os).....	Scio.	Mona (mo nah).....	Anglesea.
Cimolus (si mo lus).....	Argentiera.	Monabia (mo na be-ah).....	Man.
Coreyra (kor-si rah).....	Corfu.	Myconus (mic o-nus).....	Myconi.
Corsica (kor se-kah).....	Corsica.	Naxos (naks os).....	Naxia.
Cos (kos).....	Stanchio.	Nisyros (ni-si ros).....	Nisiri.
Crete (kret).....	Candia.	Oleáros (o-l a-ros).....	Antiparos.
Crepas (krep sah).....	Cherso.	Paros (pa ros).....	Paros.
Cyprus (si prus).....	Cyprus.	Patmos (pat mos).....	Patino.
Cythus (sith nus).....	Thermia.	Psyra (si rah).....	Ipsara.
Cythera (si-the rah).....	Cerigo.	Rhodes (rods).....	Rhodes.
Delos (de los).....	Delos.	Salamis (sal a-mis).....	Colouri.
Ebusus (eb u-sus).....	Ivica.	Samothrace (samothra se).	
Eubœa (u-be ah).....	Negropont.		Samothraki.
Fortunate (for tu-nate) Isles.	Canaries.	Samos (sa mos).....	Samos.
Hesperides (hes-per e-dez).	Bissagos.	Sardinia (sar-din e-ah).....	Sardinia.
Hibernia (hi-ber ne-ah).....	Ireland.	Scyros (si ros).....	Syra.
Icaria (i-ka-re-ah).....	Nicaria	Seriphus (se-ri fus).....	Serpho.
Iva (il vah).....	Elba.	Sicily (sis e-le).....	Sicily.
Imbros (im bros).....	Imbro.	Siphnos (sif nos).....	Siphanto.
Ios (i os).....	Nio.	Stœchades (stek a-dez).....	Hieres.
Ithaca (ith a kah).....	Theaki.	Strophades (strof a-dez).....	Strivali.
Lemnos (lem nos).....	Stalimene.	Syros (si ros).....	Syra.
Lesbos (les bos).....	Metelin.	Tenedos (ten e-dos).....	Tenedos.
Leucadia (lu ka de-ah).....	St. Maura.	Tenos (te nos).....	Tino.
Lipare (lip a-re).....	Lipari.	Thasos (tha sos).....	Thaso.
Melite (mel i-te).....	Malta.	Thera (the rah).....	Santorin.
		Thule (thu le).....	Shetland Isles.
		Vectis (vek tis).....	Isle of Wight.
		Zacynthus (za-sin thus).....	Zante.

Rivers.

SARMATIA.

ANCIENT.	MODERN.	ANCIENT.	MODERN.
Borysthenes (bo-ris the-nez).	Dnieper.	Rubo (ru bo).....	Niemen.
Hypanis (hip a-nis).....	Bog.	Tanais (tan a is).....	Don.
Rha (ra).....	Volga.	Taruntus (ta run tus).....	Dwina.
		Tyras (ti ras).....	Dnieister.

GERMANY.

Albis (al bis).....	Elbe.	Rhenus (re nus).....	Rhine.
Amisia (a mizh yah).....	Ems.	Viadrus (vi a-drus).....	Oder.
Ister (is tr).....	Danube.	Visurgis (vi-sur jis).....	Weser.
Mœnus (me nus).....	Mayne.	Vistula (vis tu-lah).....	Vistula.

Rivers — Continued.

GAUL.

ANCIENT.	MODERN.	ANCIENT.	MODERN.
Arar (a rar).....	Saone	Mosel la (mo-sel lah).....	Moselle.
Garumna (ga-rum nah).....	Garonne.	Rhodanus (rod a-nus).....	Rhone.
Liger (li jr).....	Loire.	Scaldis (skal dis).....	Scheldt.
Mosa (mo sah).....	Meuse.	Sequana (sek wan-nah)....	Seine.

SPAIN.

Anas (a nas).....	Guadiana.	Iberus (i-be rus).....	Ebro.
Bætis (be tis).....	Guadalquivir.	Minius (min e-us).....	Minho.
Durius (du re-us).....	Duero.	Tagus (ta gus).....	Tagus.

ILLYRICUM, DACIA, &c.

Danubius (da-nu be-us).....	Danube.	Pyretus (py-re tus).....	Prath.
Dravus (dra vus).....	Drave.	Savus (sa vus).....	Save.
Hebrus (he brus).....	Marizza.	Tibiscus (ti-bis kus).....	Thets.
Enus (e nus).....	Inn.		

ITALY.

Addua (ad du-ah).....	Adda.	Mincius (min se-us).....	Mincio.
Anio (a ne-o).....	Teverone.	Padus (pa dus).....	Padus.
Arnus (ar nus).....	Arno.	Rubicon (ru be-kon).....	Fiumecino.
Athesis (ath e-sis).....	Adige.	Tiber (ti ber).....	Tiber.
Aufidus (aw fe-dus).....	Ofanto.	Ticinus (ti si nus).....	Ticino.
Eridanus (e-rid a nus).....	Po.	Vulturnus (vul-tur nus).....	Volturmo.
Medoacus (me-do a-kus).....	Brenta.		
Metaurus (me-taw rus) ..	Metro.		

GREECE.

Achelous (ak-e-lo us).	Aspro Potamo.	Evenus (e-ve nus).....	Firari.
Alpheus (al-fe us)	Alfeo.	Haliacmon (ha-le-ak mon).	Jenicoro.
Astræus (as-tre us)	Vistriza.	Peneus (pe-ne us)	Peneo.
Axius (aks e-us)	Vardar.	Strymon (stri mon)....	Strimon.
Eurotas (u-ro tas)	Basili.		

ASIA.

Araxes (a-raks ez).....	Aras.	Eulæus (u-le us), or Ulai (u la-i).	Karasu.
Caicus (ka-i kus).....	Germaisti.	Euphrates (u-fra tez).....	Euphrates.
Calycadnus (kal-e-kad nus).	Kalikdoni.	Granicus (gra-ni kus).....	Ousvola.
Caystus (ka-is trus).	Minderscare.	Halys (ha lis).....	Kizil-ermak.
Cyrus (si rus).....	Kur.	Hermus (hur mus).....	Sarabas.
Daix (da iks), or Yaik (ya ik).	Ural.	Hydaspes (hi das pez).....	Behat.
Etymander (et-e-mander).	Hirmend.	Jaxartes (jaks-ar tez).....	Sir.
		Jordan (jor dn).....	Jordan.
		Lycus (likus).....	Tonsalu.

Rivers — (Continued).

ASIA.

ANCIENT.	MODERN.	ANCIENT.	MODERN.
Mæander (me-an dr)....	Meinder.	Pyremus (pir a-mus)....	Geihoun.
Orontes (o-ron tez) ..	Orontes.	Sangarius (san-ga-re-us) ..	Sakaria.
Oxus (oks us).....	Jihon	Thermodon (ther-mo du).	Termek.
Phasis (fa sis)	Rhone.	Tigris (tigris).....	Tigris

AFRICA.

Bagradas (bag ra-das) ..	Mejerdah.	Nile (nil).....	Nile.
Daradus (dar a-dus)	Senegal.	Stachir (sta chir).....	Gambia.
Niger (ni jr).....	Nijer.		

Cities and Towns.

GREAT BRITAIN.

ANCIENT.	MODERN.	ANCIENT.	MODERN.
Aquæ (a kwe) Solis, or Cal idæ.	Bath.	Londinum (lon-di num) ..	London.
		Londinium (lon-din e-um).	London.
Camboricum (kam-bor e-kum).	Cambridge.	Luguvallum (lu-gu-val lum).	Carlisle.
Cantabrigia (kan-ta-brij e-ah).		Oxonia (oks-o ne ah) ..	Oxford.
Castra Alata (kas traala ta).	Edinburgh.	Theodorunum (theod-o-ru num).	Wells.
Eboracum (e-bor a-kum, or eb-o-ra kum)	York.		
Durovernum (-ver num).	Canterbury.		

SPAIN.

Asturica (as-tu re-kah) ..	Astorga.	Gades (ga dez)	Cadiz
Barcino (bar se-no)....	Barcelona.	Hispalis (his pa-lis).....	Seville.
Bilbilis (bil be-lis)....	Calatayud.	Ilerda (i-ler dah).....	Lerida.
Cæsar (se zr) Augusta ..	Saragossa.	Italica (i-tal e kah)....	Santiponte.
Calagurris (kal-a-gur ris).	Calahorra.	Malaca (mal a-kah).....	Malaga.
		Munda (mun dah).....	Monda.
Calle (kal le)	Oporto.	Numantia (nu-man te-ah) ..	Soria.
Calpe (kal pe)	Gibraltar.	Olisippo (o-le-sip po)....	Lisbon.
Carthago (kartha go) ..	Nova.	Pompelo (pom pe-lo) ..	Pampeluna.
	Carthagena.	Saguntum (sa-gun tum).	Morviedro.
Complutum (kom-plu tum).	Alcala.	Segovia (se-go ve-ah)....	Segovia.
Conimbrica (ko-nim bre-ka).	Coimbra.	Tarraco (tar ra-ko) ..	Tarragona.
		Toletum (to-le tum).....	Toledo.
Corduba (kor du-bah) ..	Cordova.		

Cities — (Continued).

GAUL.

ANCIENT.	MODERN.	ANCIENT.	MODERN.
Aquæ Sextiæ (a kwe seks te-e)	Aix	Forum Julii (fo rum ju le-i),	Frejus.
Argentoratum (ar-jen-to-ra tum),	Strasburg.	Geneva (je-ne vah).....	Geneva.
Avaricum (av-a-ri kum)..	Bourges	Limonum (li-mo num)...	Poitiers.
Avenio (a-ve ne-o).....	Avignon.	Lugdunum (lug-du num)..	Lyons.
Aventicum (av en-ti kum),		Lutetia (lu-te te-ah).....	Paris
	Avenches.	Moguntiacum (mo-gun-ti a kum),	Metz.
Augus ta Tevero rum....	Treves.	Narbo (nar bo).....	Narbonne.
Bibracte (bi-brak te).....	Autun	Nemausus (ne-maw sus)..	Nismes.
Burdigala (bur-dig a-la),		Rotomagus (ro-tom a-gus),	Rouen.
	Bordeaux.	Tolosa (to-lo sah)	Toulouse.
Colo nia Agrippi na.....	Cologne		

ITALY.

Agrigentum (ag-re-jen tum),	Genoa.
Girgenti.	Hadria (ha dre-ah).....
Alba Longa (al bah lon gah),	Hydruntum (hi-drun tum),
Albano.	Otranto.
Ancona (an-ko nah).....	Ancona.
Antium (an te-um).....	Anzio.
Appii (ap pe-i) Fo rum,	Fossa Nuova.
	Aquileia (ak-we-le yeh).
Aquileia (ak-we-le yeh).	Aquino.
Aquinum (a-kwi num)...	Ariminum (a-rim e num),
Ariminum (a-rim e num),	Rimini.
Arpinum (ar-pi num)...	Arpino.
Augus ta Taurino rum....	Turin.
Baia (ba e-e).....	Baia.
Beneventum (-e-ven tum),	Benevento.
	Bologna.
Bononia (bo-no ne-ah)...	Brundisium (-du ze um)
Brundisium (-du ze um)	Brindisia
Caieta (ka-e-e tah).....	Cajeta.
Callipolis (kal-lip o-lis)..	Gallipoli.
Canusium (ka nu se-um)...	Canosa.
Capua (kap u-ah).....	Capua.
Caralis (kar a-lis).....	Cagliari.
Catana (kat a-nah).....	Catania.
Centum Cellæ (sel le),	Civita Vecchia.
	Chiari.
Clusium (klu se-um).....	Chiari.
Comum (ko mum).....	Como.
Cosentia (ko-sen te-ah) ..	Cosenza.
Crotone (kro-to nah) ..	Crotone.
Drepanum (drep a-num),	Trapani.
Faventia (fa-ven te-ah)...	Faenza.
Florentia (flo-ren te-ah),	Florence.
	Genoa.
	Hadria (ha dre-ah).....
	Hydruntum (hi-drun tum),
	Otranto.
	Terni.
	Leontini (le-on-ti ni)....
	Lentini.
	Lilybæum (lil-e be um)...
	Marsala.
	Mediolanum (me-de-o-la num),
	Milan.
	Mutina (mu te-nah).....
	Modena.
	Mantua (man tu ah)....
	Mantua.
	Neapolis (ne-ap o-lis)....
	Naples.
	Messana (mes-sa nah)...
	Messina.
	Ostia (os te-ah)
	Ostia.
	Pæstum (pes tum)
	Pesti.
	Panormus (pa-nor mus).....
	Palermo.
	Parma (par mah)
	Parma.
	Parthenope (par-then o-pe)
	Naples
	Pataxium (pa-ta ve-um)...
	Padua.
	Perusia (pe-ru se-ah)
	Perugia.
	Pisæ (pi se)
	Pisa.
	Placentia (pla-sen te-ah)
	Placenza.
	Preneste (pre-nes te)...
	Palestrina.
	Puteoli (pu-te o-li).....
	Pozzuolo.
	Ravenna (ra-ven nah)...
	Ravenna.
	Rhegium (re je-um).....
	Reggio.
	Salernum (sa-ler num)...
	Salerno.
	Scyllaceum (sil la-se um)
	Squillace
	Sena (se nah).....
	Siena.
	Spoletium (spo-le te-um)...
	Spoletto.
	Tarentum (ta-ren tum)...
	Taranto.
	Tergeste (ter-jes te).....
	Trieste.
	Tibur (ti br).....
	Tivoli.

Cities — (Continued).

ITALY.

ANCIENT.	MODERN.	ANCIENT.	MODERN.
Ticinum (ti-si num).....	Pavia.	Vercellæ (ver-sel le).....	Vercelli.
Tridentum (tri-den tum)...	Trent.	Verona (ve-ro nah).....	Verona.
Tusculum (tus ku-lum)...	Frascati.	Vicentia (vi-sen te ah)...	Vicenza.
Venafrum (ve-na frum)...	Venafro.	Volsinium (vol-sin e-um)...	Bolsena.
Venusia (ve-nu se-ah)...	Venosa.		

MACEDONIA.

Amphipolis (am-fip o-lis)...	Emboli.	Edessa (e-des sah)...	Edessa.
Apollonia (ap-ol-lo ne-ah)...	Polina.	Pella (pel lah).....	Je nitza.
Berea (be re ah).....	Veria.	Potidaa (pot-e-de ah)...	Cassandra.
Dium (di um).....	Standia.	Stagira (sta-ji rah).....	Stavros.
Dyrrachium (dir-rak e um),		Thessalonica (thes-a lo ni ka),	
	Durazzo.		Salonica.

GREECE.

Actium (ak te-um).....	Agio.	Larissa (la-ris sah).....	Larissa.
Anticyra (an-tis e-rah),		Leuctra (luk trah)...	Livadosta.
	Aspro-Spitia.	Methone (me-tho ne).....	Modon.
Argos (ar gos).....	Argo.	Megara (meg a-rah).....	Megaro.
Athens (ath enz)...	Athens.	Naupactus (naw pak tus)...	Lepanto
Aulis (aw lis).....	Megalo-Vathi.	Nicopolis (ni-kip o-lis)...	Prevesa.
Cenchrea (sen kre-ah)...	Kenkri.	Messene (mes-se ne)...	Macra-mathia
Chalchis (kal sis).....	Negropont.	Nauplia (naw ple-ah).....	Napoli.
Corone (ko-ro ne).....	Coron.	Patrae (pa tre).....	Patras.
Corinth (kor inth)...	Corinth.	Pharsalia (far-sa le-ah)...	Farsa.
Cyllene (sil-le ne).....	Chiarenza.	Pylos (pi los).....	Navarino.
Delphi (del fi).....	Castri.	Sicyon (sis e-ron).....	Basilico.
Eleusis (e-lu sis).....	Lepsina.	Sparta (spar tah)...	Paleo-chori.
Epidauros (ep-e-daw rus)...	Pidaura	Thebes (thebs).....	Thiva.
Lacedaemon (las-e-de mon),			
	Paleo-chori.		

ASIA MINOR.

Abydos (a-bi dos).....	Nagara.	Chalcedon (kal se dn)...	Kadi-Keni.
Adramyttium (-mit e um),		Chrysopolis (kri-sop o-lis)...	Scutari.
	Adramiti.	Clazomenae (kla-zom e-ne)...	Vourla.
Amasia (a ma se ah)...	Amasia.	Colossae (ko-los se)...	Chonos.
Amisus (a-mi sus).....	Samsoun.	Constantia (-stan te-ah)...	Constanza.
Ancyra (an-si rah).....	Angora.	Ephesus (ef e-sus).....	Ajasoluc.
Antioch (an te-ok)...	Akshehr.	Eupatoria (u-pa-to re-ah),	
Apamea (-me ah)			Tchernikeh.
	Aphiom-Karahissar.	Halicarnassus (-kar-nas sus),	
Attalia (at-a li ah).....	Satalia.		Bodrum.
Berisa (be-ri sah).....	Tocat.	Iconium (i-ko ne-um)...	Konieh.
Cæsarea (sez a re ah)...	Kaisarieh.	Laodicea (la-od-e se ah),	
Cerasus (ser a sus).....	Keresoun.		Eski hissar.

Cities — (Continued).

ASIA MINOR.

ANCIENT.	MODERN.	ANCIENT.	MODERN.
Mazaca (maz a-kah) ...	Kaisarieh.	Philadelphia (-del fe-ah),	
Miletus (me-le tus).....	Palatia		Alah-Shehr.
Nicomedia (nik-o-me-di ah),		Salamis (sal a-mis) ...	Constanza.
	Is-Nicmid.	Sardis (sar dis)	Sart.
Paphos (pa fos).....	Baffa.	Seleucia (se lu se-ah).....	Selefke.
Patara (pat a-rah).....	Patera.	Tarsus (tar sus).....	Tarso.
Perga (per-gah).....	Kara-hissar.	Telmissus (tel-mis sus) ...	Macri.
Pergamos (per ga-mos).Pergamo.		Thyatira (thi-a-ti rah) ..	Akhissar.
		Trapezus (tra-pe zus)..	Trebizond.

SYRIA, MESOPOTAMIA, &c.

Antioch (an te-ok).....	Antioch.	Hierapolis (hi-e-rap o-lis),	
Apamela (ap-a-me lah)...	Famleh.		Bambouch.
Arbela (ar-be lah).....	Erbil.	Laodicea (la-od-e-se ah)...	Latakia.
Babylon (bab e-lon) .near Hellah.		Nisibis (nis e bis)....	Nisidln.
Bersæa (be-re ah).....	Aleppo.	Tadmor (tad mor)	Palmyra.
Berytus (ber e-tus)	Beyrout.	Samosata (sa-mos a-tah) ..	Samisat.
Ctesiphon (tes e-fon).....	Modain.	Sarepta (sa-rep tah)	Sarfend.
Ecbatana (ek-bat a-nah) Hamadan		Seleucia (se-lu se-ah).....	Bagdad.
Edessa (e-des sah).....	Ourfa.	Sidon (si dn).....	Saida.
Emesa (e-me sah).....	Hems.	Tripolis (trip o-lis).....	Tripoli.
Heliopolis (he-le-op o-lis)..	Balbec.	Tyre (tir)	Sur.
Epiphania (ep-e-fa-ni ah) Famieh.			

PALESTINE.

Arimathea (ar-e-ma-the ah) Ramla		Jerusalem (je-roo sa-lem)	
Azotus (o-zo tus).....	Ezdoud.		Jerusalem.
Bethlehem (beth le-hem)		Jezreel (jez re-el).....	Ezdraelon.
	Bethlehem.	Nazareth (naz a-reth) ..	Nazareth.
Bethsan (beth san).....	Baisan.	Ptolemais (tol-e-ma is).....	Acre.
Emmaus (em ma-us)....	Amoas.	Samaria (sa-ma re-ah) ...	Sebaste.
Gaza (ga zah).....	Gaza.	Scythopolis (si-thop o-lis)..	Baisan.
Hebron (he bron).....	El Khail.	Sephoris (sef o-ris).....	Sephouri.
Jericho (jer e ko).....	Jericho.	Sychar (si kar).....	Nablous.

AFRICA.

Abydos (a bi dos).....	Madfuné.	Lycopolus (li-kop o-lus)...	Suit.
Arsinoe (ar-sin o-e).....	Suez.	Œa (e-ah).....	Tripoli.
Cæsarea (sez-a re ah)...	Shershell.	Ptolemais (tol-e-ma is)..	Tolometa.
Canopus (ka-no pus)....	Aboukir.	Syene (si-e ne).....	Syene.
Cirta (sir tah).....	Constantina.	Tingis (tin jis).....	Tangier.
Darnis (dar nis)	Derne.	Utica (u te-kah).....	Boo-Shatter.
Heliopolis (he-le-op o-lis) Matarca.		Zama (za mah).....	Zamah.

Value of Ancient Money.

Denomination.	Grains.	Gold value
Gold Shekel	183	\$5.69
Gold Maneh	13,200	569.00
Gold Talent	1,132,000	56,900.00
Silver Gerah	11	.02.25
Silver Beka	110	.26.5
Silver Shekel	220	.53
Silver Maneh	13,200	32 00
Silver Talent	660,000	1,660.00
Copper Shekel	528	.08.14
Persian Daric or Drachm (gold) ...	128	5.52
Maccabæan Shekel (silver)	220	.53
"Piece of Money" (stater, silver)....	220	.53
Penny (Denarius, silver)	58.857	.14
Farthing (Quadrans, copper)	42	.00.25
Farthing (Assarium, copper)	84	.00 5
Mite (copper)	21	.00.125

Wedding Anniversaries or Jubilees.

First	Paper.
Second	Straw.
Third	Candy.
Fourth	Leather.
Fifth	Wooden.
Seventh	Floral.
Tenth	Tin.
Twelfth	Linen.
Fifteenth	Crystal.
Twentieth	China.
Twenty-fifth	Silver.
Thirtieth	Pearl.
Thirty-fifth	Coral.
Fortieth	Emerald.
Forty-fifth	Ruby.
Fiftieth	Gold.
Seventy-fifth	Diamond.

The Diamond Wedding is usually celebrated at sixty years of married life, instead of waiting until the seventy-five years have expired. The others that are most frequently celebrated are the paper, wooden, tin, crystal, silver and gold.

HOW TO GET RICH.

VALUABLE MONEY-MAKING SECRETS.

THESE RECIPES HAVE SOLD FOR FIVE DOLLARS EACH, AND HAVE BEEN THE FOUNDATIONS OF MANY GOOD SIZED FORTUNES.

This collection of recipes and formulas for making articles which are in constant use in every household are, for the most part, articles upon which very large profits are made, both by manufacturers and dealers; some things, which cost but two or three cents to make, being retailed for as much as twenty-five cents. We point out to you the proper method to be pursued in the manufacture of these various articles, and expect you to use your own judgment and discretion in the matter of putting them up for market, and exposing them for sale. The goods, when ready for market, may be sold either direct to consumers at retail, or to store-keepers at wholesale. Those who adopt the former method may canvass from house to house, or establish a store and sell therefrom. The various ingredients required to compound all the different articles for which recipes are here given may be purchased at wholesale drug and grocery stores in any of the large cities. Large fortunes have been made upon the manufacture of single articles, for which recipes are here given.

WASHING FLUID.—1. Take one pound of sal-soda and half a pound of unslaked lime, and put them in a gallon of water; boil twenty minutes, let it stand till cool then drain off and put in a small jug or jar; soak your dirty clothes over night, or until they are wet through, then wring them and rub on plenty of soap, and in one boiler of clothes well covered with water add a teacupful of the washing fluid; boil half an hour briskly, then wash them thoroughly with suds; rinse, and your clothes will look better than by the old way of washing twice before boiling. This is an invaluable receipt, and it should be tried by every woman who would save time and labor. 2. For washing alpaca, camel's hair, and other woolen goods, and for removing marks made on furniture, carpets, rugs, etc.: Four ounces ammonia, four ounces white castile soap, two ounces alcohol, two ounces glycerine, two ounces ether. Cut the soap fine; dissolve in one quart of water over the fire, add four quarts of water. When nearly cold add the other ingredients. This will make nearly eight quarts. It must be put in a bottle and stoppered tight. It will keep good any length of time.

WASHING FLUID.—Put one pound salt-petre into a gallon of water, and keep it in a corked jug, two tablespoonfuls for a pint of soap. Soak, wash and boil as usual. This bleaches the clothes beautifully without injuring the fabric.

WASHING FLUID.—An excellent washing fluid, and one that will not injure the finest fabric, is made of one bar of Russian soap cut up fine, one tablespoonful of kerosene oil, a half cupful of washing soda

and one gallon of water. The night before washday put your clothes to soak in warm water. In the morning boil the fluid twenty minutes, add whatever cold water is required for washing the clothes, put in the clothes and boil one half hour; they are then ready to rinse and starch.

WASHING FLUID.—Take half a pound of sal soda, quarter of a pound of borax, dissolve in one gallon of hot water; let it settle; pour off in bottles. One gill of this mixture with a pint of soft soap, or half a bar of soap dissolved in hot water, is enough for a washing.

WASHING FLUID.—Add one pound of unslaked lime to three gallons of soft, boiling water. Let it settle and pour off. Then add three pounds of washing-soda, and mix with the lime water. When dissolved, use a large wineglassful to each pailful of water. Add one gill of soft-soap to a pailful of water.

BEST SOAP.—To make the best washing soap, and one that is suitable for either laundry or toilet purposes, will not soil the finest fabric or injure the most delicate complexion. Take ten pounds white bar soap, two gallons of soft water, five pounds sal soda (common washing soda); dissolve four ounces of borax and one ounce of salts of tartar in a little water; cut the soap in slices, and boil until dissolved; then add the soda and salts of tartar and mix thoroughly; pour into any box or mold, or cut into bars. This makes twenty five pounds of soap which has no equal.

DIRECTIONS.—Put the clothes to soak in warm water; soap each in proportion to the amount of dirt it contains—only the dirtiest will need rubbing. Rinse thoroughly and your clothes will look better and wear longer than washed in any other way. Try it once, and you will never use any other soap.

TRANSPARENT SOAP.—Slice six pounds of nice yellow bar soap into shavings; put into a brass, tin or copper kettle, with alcohol half gallon, heating gradually over a slow fire, stirring till all is dissolved, then add one ounce sassafras essence, and stir until all is mixed, now pour into pans about one and a half inches deep, and when cold cut into square bars the length or width of the pan, as desired.

WINDSOR SOAP.—This is made with lard. In France they use lard, with a portion of olive or bleached palm oil. It is made with one part of olive oil to nine of tallow; but a greater part of what is sold is only curd (tallow) soap, and scented with oil of caraway and bergamot. The brown is colored with burnt sugar, or umber.

TO MAKE HARD SOAP FROM SOFT.—Take seven pounds of good soft soap, four pounds sal soda, two ounces borax, once ounce hartshorn, half a pound of resin, to be dissolved in twenty-two quarts of water, and boiled about twenty minutes.

HONEY SOAP.—White cured soap, one and a half pounds, brown Windsor soap half pound. Cut them into thin shavings, and liquefy as directed above for scented soap; then add four ounces of honey, and keep it melted till most of the water is evaporated; then remove

from the fire, and when cool enough add any essential oil. According to Piesse, the honey soap usually sold consists of fine yellow soap, perfumed with oil of citronella.

ALMOND SOAP.—Best white tallow soap, fifty pounds, essence of bitter almonds, twenty ounces; melt by the aid of a steam or water bath.

BABBIT'S PREMIUM SOAP.—Five gallons of strong lye, five gallons of water, five pounds of tallow, two pounds of sal soda, half a pound of rosin, one pint salt, one pint of washing fluid. Let this water boil, then put in the articles, and boil half an hour. Stir it well while boiling, and then run it into moulds; it will be ready for use as soon as cold. The above is for 100 pounds of soap.

ROYAL WASHING POWDER.—Mix any quantity of soda ash with an equal quantity of carbonate of soda—ordinary soda—crushed into coarse grains. Have a thin solution of glue, or decoction of linseed oil ready, into which pour the soda until quite thick. Spread it out on boards in a warm apartment to dry. As soon as dry shake up well so that it will pack easily into nice, square packages. Label neatly. Pound packages cost 7 cents, retail for 25 cents.

PATENT STARCH POLISH.—Take common dry potato or wheat starch, sufficient to make a pint of starch when boiled. When boiled add one-half drachm spermaceti and one-half drachm of white wax, then use it as common starch, only using the iron as hot as possible.

ARTIFICIAL GOLD.—This is a new metallic alloy which is now very extensively used in France as a substitute for gold. Pure copper, one hundred parts; zinc, or, preferably tin, seventeen parts; magnesia, six parts; sal-ammoniac, three-sixths part; quicklime, one eighth part; tartar of commerce, nine parts, are mixed as follows: The copper is first melted, and the magnesia, sal-ammoniac, lime and tartar are then added separately, and by degrees, in the form of powder; the whole is now briskly stirred for about half an hour, so as to mix thoroughly; and when the zinc is added in small grains by throwing it on the surface and stirring until it is entirely fused, the crucible is then covered, and the fusion maintained for about thirty-five minutes. The surface is then skimmed, and the alloy is ready for casting. It has a fine grain, is malleable, and takes a splendid polish. It does not corrode readily, and for many purposes is an excellent substitute for gold. When tarnished, its brilliancy can be restored by a little acidulated water. If tin be employed instead of zinc, the alloy will be more brilliant. It is very much used in France, and must ultimately attain equal popularity here.

ELECTRIC POWDER.—One of the most salable articles of the day and staple as flour, something that every housekeeper will buy. It is useful for gold and silver plated ware, German silver, brass, copper, tin, steel, or any material where a brilliant lustre is required. It is put in two ounce wooden boxes, costs three cents to manufacture, and sells at retail for twenty-five cents—to agents and stores for \$12 per hundred boxes.

RECIPE.—To four pounds best quality whiting add one-half pound cream tartar and three ounces calcined magnesia; mix thoroughly together, box and label.

DIRECTIONS.—Use the powder dry, with a piece of chamois skin or cotton flannel, previously moistened with water or alcohol, and finish with the powder dry. A few moments' rubbing will develop a surprising lustre, different from the polish produced by other substances.

TO SHINE SILVER.—Dissolve a quantity of alum in water, so as to make a pretty strong brine, and skim it carefully; then add some soap to it, dip a linen rag into it, and rub over the silver.

IMITATION GOLD.—Sixteen parts platina, seven parts copper, one part zinc. Put in a covered crucible, with powdered charcoal, and melt together till the whole forms one mass and are thoroughly incorporated together. Or, take four ounces platina, three ounces silver, one ounce copper.

IMITATION SILVER.—Eleven ounces refined nickel, two ounces metallic bismuth. Melt the compositions together three times, and pour them out in lye. The third time, when melting, add two ounces pure silver. Or take one quarter ounce copper, one ounce bismuth, two ounces salt-petre, two ounces common salt, one ounce arsenic, one ounce potash, two ounces brass, and three ounces of pure silver. Melt together in a crucible.

GILDING WITHOUT A BATTERY.—Clean the silver or other article to be gilded with a brush and a little ammonia water until it is evenly bright and shows no tarnish. Take a small piece of gold and dissolve it in about four times its volume of metallic mercury, which will be accomplished in a very few minutes, forming an amalgam. Put a little of the amalgam on a piece of dry cloth and rub it on the article to be gilded. Then place on a stone in a furnace and heat to the beginning of redness. After cooling it must be cleaned with a brush and a little cream of tartar, and a beautiful and permanent gilding will be found.

SILVER-PLATING FLUID.—Dissolve one ounce of nitrate of silver, in crystals, in twelve ounces of soft water; then dissolve in the water two ounces cyanuret of potash, shake the whole together, and let it stand until it becomes clear. Have ready some half-ounce vials, and fill half full of Paris white, or fine whiting; and then fill up the bottles with the liquor, and it is ready for use. The whiting does not increase the coating powder; it only helps to clean the articles, and save the silver fluid, by half filling the bottle.

CELEBRATED RECIPE FOR SILVER WASH.—One ounce of nitric acid, one ten-cent piece, and one ounce of quicksilver. Put in an open glass vessel, and let stand until dissolved; then add one pint of water, and it is ready for use. Make it into a powder by adding whiting, and it may be used on brass, copper, German silver, etc.

BRONZING FLUID.—For brown: Iron filings or scales one lb., arsenic two ounces, hydrochloric acid 1 lb., metallic zinc one ounce.

The article to be bronzed is dipped in this solution till the desired effect is produced.

BLACK INK.—Ink, like soap, is something everybody uses, and few people realize that thousands of barrels of it are made and sold.

Receipt for making the best and most durable black writing ink, as used by the leading penmen of the United States and Canada.

To 2 gallons of strong decoction of logwood, well strained, add 1 1-2 lbs. blue galls in coarse powder, 6 ounces sulphate of iron, 1 oz. acetate of copper, 6 oz. pulverized sugar, and 8 oz. of gum arabic; set the above on the fire until it begins to boil, strain, and then set it away until it has acquired the desired blackness. The strong "decoction of logwood" is made by boiling; use soft water, into which put two ounces of logwood; strain after taking from the fire.

The above ink properly made, according to the above directions, is unsurpassed for elegant writing of any kind. It flows freely from the pen, turns to a deep black after writing, and does not fade. Records written with it fifty years ago are as legible as the day they were put upon the paper.

GOLD INK.—Two parts mosaic, 1 part gum arabic (by measure); mix with soft water until reduced to a proper condition.

GREEN INK.—Powder 1 ounce verdigris, and put it in 1 quart of vinegar; after it has stood two or three days, strain off the liquid.

BLUE INK.—Two oz. Chinese blue, 3-4 oz. pure oxalic acid, 1 oz. powdered gum arabic, 6 pints distilled soft water; mix well and then strain.

PURPLE INK.—Eight parts logwood in 64 parts soft water, by measure, boil down to one-half, then strain and add one part chloride of tin.

INVISIBLE INK.—Sulphuric acid 1 part, water 20 parts; mix together and write with a quill pen, which writing can only be read after heating it.

FINE PEPPERMINT LOZENGES.—Best powdered white sugar, 7 pounds; pure starch, 1 pound; oil of peppermint to flavor. Mix with mucilage.

INDIA INK.—Ivory black ground into powder, make into a paste with a few drops of essence of musk, and one half as much essence of ambergris, and then form into cakes.

TO PRESERVE FLOWERS IN WATER.—Mix a little carbonate of soda in the water, and it will keep the flowers a fortnight.

SCARLET INK.—Dissolve 1 oz. garancine of the best quality in 1 oz. liquor ammonia; add 1 pint soft cold water distilled. Mix together in a mortar, filter and dissolve in it $\frac{1}{4}$ oz. of gum arabic.

LUMINOUS INK.—Shines in the dark—Phosphorous, one-half drachm, oil cinnamon, one-half oz., mix in a vial, cork tightly, heat it slowly until mixed. A letter written with this ink can only be read in a dark room, when the writing will have the appearance of fire.

BROWN INK.—Take 4 parts powdered catechu and put it in 6 parts soft water; let it stand for half a day, shaking occasionally, then strain, and to bring it to the proper consistency, add sufficient of a solution of bichromate of potash, 1 part in 16 of water, all by measure.

INK POWDER.—One pound of nutgall, 7 ounces copperas, 7 ounces gum arabic; this amount of ink powder will make one gallon of good black ink; to prevent it from moulding, powder two or three cloves and mix with each pound of powder.

BLUE INK.—The soluble indigo of commerce makes a good blue ink when slightly diluted with hot water. It is incorrosive for steel pens, and flows freely.

VIOLET INK.—Boil sixteen ounces of logwood in three quarts of rain water to three pints, add three ounces of clean gum arabic and five ounces of alum, powdered. Shake till well dissolved. It would be well to strain through wire sieve.

INK FOR MARKING PACKAGES.—Take lamp black and mix thoroughly with sufficient turpentine to make it thin enough to flow from the brush. Powdered ultramarine blue makes a fine blue marking ink. Six or eight ounce bottles sell for twenty-five cents.

A QUART OF INK FOR A DIME.—Buy extract of logwood, which may be had at three cents an ounce, or cheaper by the quantity. Buy also, for three cents, an ounce of *bi-chromate of potash*. Do not make a mistake and get the simple chromate of potash. The former is orange red, and the latter clear yellow. Now, take half an ounce of extract of logwood and ten grains of bi-chromate of potash, and dissolve them in a quart of hot rain water. When cold, pour it into a glass bottle, and leave it uncorked for a week or two. Exposure to the air is indispensable. The ink is then made, and has cost five to ten minutes' labor, and about three cents besides the bottle. The ink is at first an intense steel blue, but becomes quite black.

SYMPATHETIC OR SECRET INKS.—Mix equal parts of sulphate of copper and sal-ammoniac and dissolve in water. Writing done with this ink is invisible until paper is heated, when it turns a yellow color. Lemon juice, milk, juice of onions, and several other liquids become black when heated.

TRAVELERS' INK.—White blotting paper is saturated with aniline black, and several sheets are pasted together so as to form a thick pad. When required for use, a small piece is torn off and covered with a little water. The black liquid which dissolves out is a good writing ink. A square inch of the paper will produce enough ink to last for a considerable writing, and a few pads would be all that an exploring party need carry with them. As water is always available, the ink is readily made. This is a new and original receipt. Any enterprising man or boy can make a fortune with this valuable article alone.

INDELIBLE INK FOR MARKING CLOTHING.—Nitrate of silver, five scruples; gum arabic, two drachms; sap green, 1 scruple; distilled

water, one ounce; mix together. Before writing on the article to be marked, apply a little of the following: Carbonate of soda, one-half ounce; distilled water, four ounces. Let this last, which is the mordant, get dry, then, with a quill pen, write what you require.

BLACK INK.—To make jet black ink, that is shiny and glistening when applied, dissolve in one-half pint of soft water, three-eighths ounces of potassium bichromate, and add sixty ounces logwood extract dissolved in one gallon of water; then dissolve in one gallon of water, by continued boiling, borax, six ounces; shellac, one and one-half ounces. Mix all together while warm and add ammonia, three ounces.

INDELIBLE MARKING INK.—Nitrate of silver, two drachms; distilled water, three ounces. Dissolve. Moisten the spot to be marked with a concentrated solution of carbonate of potassa, to which a little gum water must be added. When the spot has become dry, write upon it with the solution of nitrate of silver.

COPYING INK.—Take two gallons of rain water and put into it one-quarter pound of gum arabic, one-quarter pound clean copperas, three-quarters pound nutgalls pulverized. Mix and shake occasionally for ten days and strain. If needed sooner, let it steep in an iron kettle until the required strength is obtained.

VIOLET INK.—1 ounce best violet aniline; dissolve it in one gill of hot alcohol, stir and when thoroughly dissolved add one gallon of boiling hot water; dissolve in the hot water $1\frac{1}{2}$ ounces white gum arabic. This will make the most rich and beautiful ink of this color in existence; will not fade or corrode steel pens. An addition of 1 pound of sugar and $\frac{1}{2}$ lb. glycerine will make an excellent copying ink. This ink is usually sold at \$2 per pint bottle, \$1 for half pint and 50 cents for gill bottle. It is worth an enterprising man or woman \$1,000. Do not bury it—use it and make money out of it.

SILVER INK.—Mix one oz. of the finest pewter or block tin in shavings with two oz. quicksilver till it becomes fluid; then add to it sufficient gum arabic water to produce the proper consistency.

YELLOW INK.—A little alum added to saffron, in soft, hot water, makes a beautiful yellow ink.

PREPARED GLUE FOR CONSTANT USE.—To any quantity of glue use common whisky or alcohol, instead of water. Put the bits of glue, well broken up, into a bottle; fill up with the spirit, and set it in a closet, or where it is warm, for a week; then it will be ready to use without the application of heat. Glue thus prepared will keep for years, and will be fit for use at all times, unless the weather is very cold; then place the bottle in boiling water for a few moments. To obviate the difficulty of the stopper becoming tight from the glue, it is a good plan to make the glue in a tin box, and the cover will fit on tightly without sticking. It must be closed tight, or the spirit will evaporate.

GLUE WHICH WILL UNITE EVEN POLISHED STEEL.—A Turkish receipt for a cement used to fasten diamonds and other precious

stones to metallic surfaces, and which is said to strongly unite even surfaces of polished steel, although exposed to moisture, is as follows: Dissolve five or six bits of gum mastic, each of the size of a large pea, in as much spirits of wine as will suffice to render it liquid. In another vessel dissolve in brandy as much isinglass, previously softened in water, as will make a two ounce phial of strong glue, adding two bits of gum ammoniac, which must be rubbed until dissolved. Then mix the whole with heat. Keep in a phial closely stopped. When it is to be used, set the phial in boiling water.

CHEAP WATERPROOF GLUE.—Melt common glue with the smallest possible quantity of water; add, by degrees, linseed oil rendered dry by boiling with litharge. While the oil is being added, the ingredients must be well stirred to incorporate them thoroughly.

LIQUID GLUE.—Liquid glue may be made by dissolving glue in strong, hot vinegar, and adding one-fourth as much alcohol and a little alum. This will keep any length of time when placed in a closely stoppered bottle, and will mend horn, wood and mother of-pearl.

GLUE TO RESIST MOISTURE.—Glue, five parts; resin, four parts; red ochre, two parts. Mix with smallest possible quantity of water.

FURNITURE POLISH.—Equal parts sweet oil and vinegar, and a pint of gum arabic finely powdered. Shake the bottle and apply with a rag. It will make furniture look as good as new.

FURNITURE POLISH.—Take beeswax and turpentine in the proportion of two ounces of the former to half a pint of the latter. Put the turpentine in a tin basin and cut the beeswax in small pieces and put in, then put in the oven when not very hot, so it (the wax) will gradually melt; stir it constantly; apply to the furniture with a piece of woollen rag (a piece of broadcloth is best for the purpose), and have another piece to rub with. Don't be afraid to use plenty of "elbow grease."

FURNITURE POLISH.—Equal quantities of common wax, white wax, white soap, in the proportion of one ounce of each to pint of water. Cut the above ingredients fine and dissolve over a fire until well mingled. Bottle and label.

TO MAKE PAINT FOR ONE CENT A POUND.—To one gallon of soft hot water add four pounds sulphate of zinc (crude). Let it dissolve perfectly, and a sediment will settle at the bottom. Turn the clear solution into another vessel. To one gallon of paint (lead and oil) mix one gallon of the compound. Stir it into the paint slowly for ten or fifteen minutes, and the compound and the paint will perfectly combine. If too thick, thin it with turpentine. This receipt has been sold to painters as high as \$100 for the privilege to use the same in their business.

FRENCH POLISH.—Many will be glad to know how the fine original polish of furniture may be restored, especially in the case of such articles as pianos, fancy tables, cabinets, lacquered ware, etc., which have become tarnished by use. Make a polish by putting half an

ounce of shellac, the same quantity of gumlac and a quarter of an ounce of gum sandarac into a pint of spirits of wine. Put them all together in a stone bottle near the fire, shaking it very often. As soon as the gums are dissolved it is ready for use. Now make a roller of woollen rags—soft old broadcloth will do nicely—put a little of the polish on it, and also a few drops of linseed oil. Rub the surface to be polished with this, going round and round over a small space at a time, until it begins to be quite smooth. Then finish by a second rubbing with spirits of wine and more of the polish, and your furniture will have a brilliant lustre, equal to new.

JET BLACK VARNISH.—To make a jet black varnish that can be used for furniture or for small wood-handles, that will make them smooth and shining and hard and solid, so that they will not get dim by handling or lose their gloss, take of asphaltum, three ounces; boiled oil, four quarts; burnt umber, eight ounces, and enough oil of turpentine to thin. The first three must be mixed by the aid of heat, and the turpentine gradually added (out of doors and away from fire) before the mixture has cooled. The work (dry) is given several coats, each being hardened in a japanner's oven. The last coat may be rubbed down, first with tripoli applied on a soft cloth, then with a few drops of oil.

A CEMENT WITHSTANDING HEAT AND MOISTURE.—Pure white lead, or zinc white, ground in oil and used very thick, is an excellent cement for mending broken crockery ware; but it takes a very long time to harden. It is well to put the mended object in some store-room, and not to look after it for several weeks, or even months. It will then be found to be so firmly united that, if again broken, it will not part on the line of the former fracture.

CEMENT FOR MENDING BROKEN CHINA.—Stir plaster of Paris into a thin solution of gum arabic, till it becomes a viscous paste. Apply it with a brush to the fractured edges, and draw the parts closely together.

GLYCERINE CEMENT.—A cement, said to be capable of use where resistance to the action of both water and heat is required, is composed by mixing ordinary glycerine with dry litharge, so as to constitute a tough paste.

CEMENT FOR GLASS, CROCKERY, ETC.—Four pounds of white glue, one and a half pounds of dry white lead, half a pound of isinglass, one gallon of soft water, one quart of alcohol, one half pint of white varnish. Dissolve the glue and isinglass in the water by gentle heat, if preferred, stir in the lead, put the alcohol in the varnish, and mix the whole together.

JAPANESE CEMENT.—Immediately mix the best powdered rice with a little cold water, then gradually add boiling water until a proper consistence is acquired, being particularly careful to keep it well stirred all the time; lastly, it must be boiled for a minute in a clean saucepan or earthen pipkin. This glue is beautifully white and almost transparent, for which reason it is well adapted for fancy paper work, which requires a strong and colorless cement.

MARBLE CEMENT.—Take plaster of Paris and soak it in a saturated solution of alum, then bake the two in an oven, the same as gypsum is baked to make it plaster of Paris. After which they are ground to powder. It is then used as wanted, being mixed with water, like plaster, and applied. It sets into a very hard composition, capable of taking a very high polish. It may be mixed with various coloring minerals, to produce a cement of any color capable of imitating marble.

CEMENT TO MEND CHINA.—Take a very thick solution of gum arabic, and stir into it plaster of Paris, until the mixture is of proper consistence. Apply it with a brush to the fractional edges of the chinaware, and stick them together. In a few days it will be impossible to break the article in the same place.

EGYPTIAN CEMENT (for mending China, Glass or Woodenware).—Take one pound of the best white glue, one-half pound dry white lead, one quart soft water, one-half pint alcohol. Put the first three articles in a dish, and that dish in a pot of boiling water; let it boil until dissolved, then add the alcohol, and boil again until mixed. A little camphor should also be added to preserve it and disguise its composition. Put in small bottles; twenty-five cents each.

WHITE CEMENT.—Take white (fish) glue, one pound and ten ounces; dry white lead, six ounces; soft water, three pints; alcohol, one pint. Dissolve the glue by putting it in a tin kettle or dish containing the water, and set this dish in a kettle of water, to prevent the glue from being burned. When the glue is all dissolved, put in the lead and stir and boil until it is thoroughly mixed; remove from the fire, and when cool enough to bottle add the alcohol, and bottle while it is yet warm, keeping it corked. This last recipe has been sold about the country for from twenty-five cents to five dollars, and one man gave a horse for it.

PASTE FOR REMOVING GREASE FROM SILK.—Rub together fine French chalk and lavender to the consistence of a thin paste, and apply thoroughly to the spots with the fingers; place a sheet of brown or blotting-paper above and below the silk, and smooth it with a moderately-heated iron. The French chalk may then be removed by brushing.

VOLATILE SOAP FOR REMOVING PAINT, ETC.—Four tablespoonfuls of spirits of hartshorn, four tablespoonfuls of alcohol and a tablespoonful of salt. Shake the whole well together in a bottle and apply with a sponge or brush.

GREASE EXTRACTOR.—Aqua ammonia, two ounces; soft water, one quart; salt-petre, one teaspoonful; shaving soap in shavings, one ounce; mix together; dissolve the soap well, and any grease or dirt that can not be removed with this preparation, nothing else need be tried for it. When used for carpets pour on enough to cover any grease or oil that has been spilled, sponging and rubbing well and applying again if necessary; then wash off with cold water. It is a good mixture to have in the house for many things; is sure death to bedbugs if put in the crevices which they inhabit; will remove paint where oil was used in mixing it, and will not injure the finest fabrics.

TRACING PAPER.—Paper well wet with Canada balsam and camphene, and dried.

LIQUID BLACKING.—Ivory black, two pounds; molasses, two pounds; sweet oil, one pound. Rub together till well mixed; then add oil vitriol, three quarters of a pound; coarse sugar, half pound; and dilute with beer bottoms. This can not be excelled.

I X L BLACKING.—Put one gallon of vinegar in a stone jug, and one pound of ivory black well pulverized, half a pound of loaf sugar, half an ounce of oil of vitriol and seven ounces of sweet oil. Incorporate the whole by stirring.

EXCELLENT PASTE BLACKING.—Half a pound of ivory black, half a pound of molasses, half an ounce of powdered alum, one drachm of turpentine, one ounce of sulphuric acid, two ounces of raw linseed oil. The ivory black and molasses must first be mixed together until thoroughly incorporated; then add the rest of the ingredients. It keeps best in a bladder.

CIDER VINEGAR.—After cider has become too sour for use, set it in a warm place, put to it occasionally the rinsings of the sugar basin or molasses jug, and any remains of ale or cold tea; let it remain with the bung open, and you will soon have the best of vinegar.

CIDER CHAMPAGNE.—Good cider, twenty gallons; spirits, one gallon; honey or sugar, six pounds. Mix and let them rest for a fortnight; then fine with skimmed milk, one quart. This, put up in champagne bottles, silvered and labelled, has often been sold for champagne. It opens very sparkling.

VINEGAR.—Eight gallons rain water, three quarts molasses, two yeast cakes; shake well. Put in a warm place, and in ten days add one sheet wrapping paper covered with molasses and torn into strips—it makes the mother.

EXCELSIOR AXLE GREASE.—Take one part good plumbago (black lead), sifted through a coarse muslin so as to be perfectly free from grit, and stir it into five quarts of lard, warmed so as to be stirred easily without melting. Stir vigorously until it is smooth and uniform, then raise the heat until the mixture melts. Stir constantly, remove from the fire, and keep stirring until cold. Apply cold to the axle, or any other bearings, with a brush. If intended for use where the axle or bearing is in a warm apartment, as the interior of mills, etc., two ounces of hard tallow or one ounce of beeswax may be used to every ten pounds of the mixture. This grease is cheaper in use than oil, tallow or tar, or any compound of them, and can be sold at a good profit in any settlement.

AXLE GREASE.—One pound of black lead, ground fine and smooth, with four pounds of lard. A little powdered gum camphor is sometimes added.

GLYCERINE LEATHER POLISH.—Mix intimately together three or four pounds of lamp black and a half pound of burned bones with five pounds of glycerine and five pounds of syrup. Then gently

warm two and three-quarter ounces of gutta-percha in an iron or copper kettle until it flows easily, add ten ounces of olive oil, and when completely dissolved, one ounce of stearine. This solution, while still warm, is poured into the former and well mixed. Then add five ounces of gum senegal dissolved in one and a half pounds of water, and a half ounce of lavender or other oils to flavor it. For use it is diluted with three or four parts of water. It gives a fine polish, is free from acid, and the glycerine keeps the leather soft and pliable.

WATERPROOF COMPOUND.—Suet, eight ounces; linseed oil, eight ounces; yellow beeswax, six ounces; neatsfoot oil, one and a half ounces; lampblack, one ounce; litharge, one-half ounce. Melt together, and stir till cold.

WATERPROOF BLACKING.—Dissolve an ounce of borax in water, and in this dissolve gum shellac until it is the consistency of paste; add lampblack to color. This makes a cheap and excellent blacking for boots, giving them the polish of new leather. The shellac makes the boots or shoes almost entirely waterproof. Camphor dissolved in alcohol added to the blacking makes the leather more pliable and keeps it from cracking. This is sold at 50 cents for a small bottle. By making it yourself \$1 will buy materials for a gallon.

FRENCH POLISH DRESSING FOR LEATHER.—Mix two pints best vinegar with one pint soft water; stir into it a quarter pound of glue, broken up, half a pound logwood chips, one-quarter ounce finely-powdered indigo, one-quarter ounce of the best soft soap, one-quarter ounce of isinglass; put the mixture over the fire and let it boil ten minutes or more; then strain, bottle and cork. When cold it is fit for use. Apply with a sponge.

POLISH FOR BOOTS AND SHOES.—Mix together two pints of the best vinegar, and one pint of water; stir into a quarter of a pound of glue, broken up, half a pound of logwood chips and a quarter of an ounce of isinglass. Put the mixture over the fire and let it boil ten or fifteen minutes. Then strain the liquid, and bottle and cork it. When cold it is fit for use. The polish should be applied with a clean sponge.

A GOOD PASTE.—To make a paste that will keep, take of wheat flour, one ounce; powdered alum, one-half drachm; water sufficient, or eight ounces; oil of cloves, or wintergreen, three or four drops. Rub the flour and the alum with water to the consistence of milk; place this over a moderate fire and stir constantly until the paste drops from the wooden paddle in jelly-like flakes and has the appearance of starch. While the mass is still hot, add the essential oil and pour the paste into an earthenware pot or open jar. In the course of about an hour a crust forms on the top; pour gently on this an inch of water, more or less. When some paste is wanted, decant the water, take out the quantity needed and put some water again on the remainder, repeating the operation each time. Paste may be kept in this way for months, and will never be troubled with flies.

TOOTH POWDER.—1. Dissolve two ounces of borax in three pints of boiling water, and before it is cold add one teaspoonful of the spirits of camphor, and bottle for use. A tablespoonful of this mixture mixed with an equal quantity of tepid water, and applied daily with a soft brush, preserves and beautifies the teeth, extirpates all tartarous adhesion, arrests decay, induces healthy action of the gums, and makes the teeth pearly white. 2. Mix six ounces of the tincture of Peruvian bark with half an ounce of sal-ammoniac. Shake it well before using. Take a spoonful and hold it near the teeth, then with a finger dipped into it, rub the gums and teeth, which must afterward be washed with warm water. This tincture cures the toothache, preserves the teeth and gums, and makes them adhere to each other. 3. Prepared chalk, one pound; camphor, one or two drachms. The camphor must be finely powdered by moistening it with a little spirits of wine, and then intimately mixed with the chalk. 4. Ten cents' worth ground chalk, five cents' worth orris root, five cents' worth myrrh, one teaspoonful powdered castile soap. Mix all well together. 5. A mixture of honey with the purest charcoal will prove an admirable cleanser.

ROSE TOOTH PASTE.—Cuttle-fish bone three ounces; prepared chalk, two ounces; orris, one ounce; lake or rose pink to give a pale rose color; attar of rose, sixteen drops; honey of roses in sufficient quantity.

X L N T TOOTH POWDER.—Peruvian bark, two ounces; orris root, one ounce; sal-ammonia, one-half ounce; catechu, six drachms; myrrh, six drachms; oil of cloves, six or eight drops.

PREMIUM TOOTH POWDER.—Six ounces prepared chalk, one-half ounce cassia powder, one ounce orris. Mix well. Put in small pots and label.

TOOTH POWDER.—Ingredients: Powdered charcoal, four ounces; powdered yellow bark, two ounces; powdered myrrh, one ounce; orris root, half an ounce.

PEARL WHITE TOOTH POWDER.—Take chloride of lime one ounce, prepared chalk fifteen ounces, pulverized Peruvian bark half an ounce, and a few drops of attar of roses.

FAMILY SALVE.—Take the root of the yellow dock and dandelion, equal parts; add good proportion of celandine and plantain. Extract the juices by steeping or pressing. Strain carefully, and simmer the liquid with sweet cream or fresh butter and mutton tallow, or sweet oil and mutton tallow. Simmer together until no appearance of the liquid remains. Before it is quite cold put it into boxes. This is one of the most soothing and healing preparations for burns, scalds, cuts and sores of every description.

ANTI-BILIOUS PILLS.—Compound extract of colocynth, sixty grains; rhubarb, thirty grains; soap, ten grains. Make into twenty-four pills. Dose, two to four.

CAPTAIN VINE HALL'S REMEDY FOR LOVE OF STRONG DRINK.—Sulphate of iron, five grains; peppermint water, eleven drachms;

spirit of nutmeg, one drachm. To be taken twice a day in doses of a wineglassful with or without water. This recipe is not only an inestimable boon to the victim of strong drink, but properly "pushed" is capable of yielding a handsome income from its manufacture. This remedy is prepared by different persons under different titles, and sold at from \$1 to \$5 per bottle.

SWAIM'S VERMIFUGE.—Wormseed, two ounces; valerian, rhubarb, pink-root, white agaric, each one and a half ounces. Boil in sufficient water to yield three quarts of decoction, and add to it thirty drops of oil of tansy and forty-five drops of oil of cloves, dissolved in a quart of rectified spirits. Dose, one teaspoonful at night.

FRENCH PUTTY.—Seven pounds of linseed oil and four pounds of brown umber are boiled for two hours, and sixty-two grammes wax stirred in. After removal from the fire, five and a half pounds fine chalk and eleven pounds white lead are added and thoroughly incorporated; said to be very hard and permanent.

BLACK SEALING WAX.—Take the best black resin, three pounds; beeswax, one half pound; and finely powdered ivory black, one pound. Melt the whole together over a slow fire, and make into sticks.

RED SEALING WAX.—Take four pounds of shellac, one and a half pounds of turpentine, three pounds of finest cinabar, and add four ounces Venetian; mix the whole well together, and melt over a very slow fire. Pour it on a thick smooth glass, or any other flat surface, and make into sticks.

BAY RUM.—Saturate one-quarter pound of carbonate of magnesia with oil of bay; pulverize the magnesia, place it in a filter, and pour water through it until the desired quantity is obtained, then add alcohol. The quantity of water and alcohol employed depends on the desired strength and quantity of the bay rum. Another: Oil of bay, ten fluid drachms; oil of pimento, one fluid drachm; acetic ether, two fluid drachms; alcohol, three gallons; water, two and a half gallons. Mix, and after two weeks repose, filter.

SHAVING PASTE.—White wax, spermaceti, and almond oil; melt, and while warm beat in two squares of Windsor soap, previously reduced to a paste with rose water.

MUCILAGE FOR LABELS.—Dextrine two ounces, glycerine one drachm, alcohol one ounce, water six ounces.

MUCILAGE.—A very superior quality of mucilage is made by dissolving clear glue in equal volumes of water and strong vinegar, and adding one-fourth of an equal quantity of alcohol, and a small quantity of a solution of alum in water. The action of the vinegar is also due to the acetic acid which it contains. This prevents the glue from glutinizing by cooling; but the same result may be accomplished by adding a small quantity of nitric acid. Some of the preparations offered for sale are merely boiled starch or flour, mixed with nitric acid to prevent the glutinizing.

I X L BAKING POWDER.—Take one pound tartaric acid in crystals, one and a half pounds bi-carbonate soda, and one and a half pounds

potato starch. Each must be powdered separately, well dried by slow heat and well mixed through a sieve. Pack hard in tinfoil, tin, or paper glazed on the outside. The tartaric acid and bi-carbonate of soda can of course be bought cheaper of wholesale druggists than you can make them unless you are doing things on a very large scale, but potato starch any one can make. It is only necessary to peel the potatoes and to grate them up fine into vessels of water, to let them settle, pour off the water and make the settlings in balls, and to dry them. With these directions, any one can make as good a baking powder as is sold anywhere. If he wants to make it very cheap, he can take cream of tartar and common washing (carbonate of) soda, instead of the articles mentioned in the recipe, but this would be advisable only where customers insist on excessively low prices in preference to quality of goods.

BAKING POWDER.—Take five ounces of tartaric acid, eight ounces of bi-carbonate of soda, and sixteen ounces of potato starch; dry them all separately in a cool oven, not hot enough to brown them, and mix the whole together by rubbing through a fine sieve several times. Half a teaspoonful to every pint of flour. The powder must be well mixed with the flour, after which cold water is used for mixing up, and the dough should be put into tins at once and baked in a hot oven. Quick work makes the best biscuits, bread, etc., but the mixing must be thoroughly done.

BAKING POWDER.—Take by weight six parts of bi-carbonate of soda to five parts of tartaric acid, which being much purer than cream of tartar, is greatly to be preferred. Get the ingredients in this proportion from a reliable wholesale druggist. See that they are perfectly dry, roll the lumps out, mix thoroughly together, bottle tightly, and keep in a dry place. This has been used for months with much satisfaction.

A SIMPLE INSECTICIDE.—Hot alum water is the best insect destroyer known. Put the alum into hot water and let it boil till it is all dissolved; then apply the solution hot with a brush to all cracks, closets, bedsteads, and other places, where any insects are found. Ants, bedbugs, cockroaches and creeping things are killed by it; while it has no danger of poisoning the family or injuring the property.

MOTH PREVENTIVE.—A very pleasant perfume, and also preventive against moths, may be made of the following ingredients: Take of cloves, caraway seeds, nutmeg, mace, cinnamon and Tonquin beans, of each one ounce; then add as much Florentina orris root as will equal the other ingredients put together. Grind the whole well to powder, and then put it in little bags among your clothes, etc.

RECIPE FOR MAKING ARTIFICIAL HONEY.—To ten pounds sugar add three pounds water, forty grains cream tartar, ten drops essence of peppermint and three pounds strained honey. First dissolve the sugar in water, and take off the scum; then dissolve the cream tartar in a little warm water, which you will add with some little stirring; then add the honey; heat to a boiling point, and stir for a few minutes.

INFALLIBLE REMEDY FOR THE EVACUATION OF THE TAPEWORM.—Mix four ounces of pumpkin seed peeled and ground with four ounces of fresh milk. Take this in two potions with 15 drops of male fern essence in each. The first is taken when going to bed and the other only in the morning. Two hours after taking the second potion, take a strong dose of castor oil and the animal is sure to be turned out. To make the effect of the physic sure it is necessary to abstain from food and drink till the evacuation has taken place. Another dose of oil would hasten the work.

STOUGHTON BITTERS.—Three-fourths of an ounce Peruvian bark, one ounce wild cherry bark, two ounces gentian root, bruised, one ounce dried orange peel, one ounce cardamom seeds, bruised; keep in one gallon spirits two or three weeks. Extensively sold for cock-tails. Cures dyspepsia, etc.

TOBACCO ANTIDOTE.—Buy two ounces or more of gentian root, coarsely ground. Take as much of it after each meal, or oftener, as amounts to a common quid of "fine-cut". Chew it slowly and swallow the juice. Continue this a few weeks, and you will conquer the insatiable appetite for tobacco.

CAMPBOR TABLET FOR CHAPPED HANDS, ETC.—Melt tallow, and add a little powdered camphor and glycerine, with a few drops of oil of almonds to scent. Pour in molds and cool.

CHLORINE PASTILES FOR THE BREATH.—Dry chloride of lime, two drachms; sugar, eight ounces; starch, one ounce; gum tragacanth, one drachm; carmine, two grains. Form into small lozenges.

WILD CHERRY BITTERS.—Boil a pound of wild cherry bark in a quart of water till reduced to a pint. Sweeten; add two ounces rum to preserve, or, if to be used immediately, omit the rum. Dose, three tablespoonfuls three times a day.

GODFREY'S CORDIAL.—Sassafras, six ounces; seeds of coriander, caraway, and anise, of each one ounce; infuse in six pints of water, simmer the mixture till reduced to four pints; then add six pounds of molasses; boil a few minutes; when cold add three fluid ounces of tincture of opium. For children teething.

TOOTHACHE.—Opium, five grains; oil of cloves, three drops; extract of henbane, five grains; extract of belladonna, ten grains; powdered pellitory, sufficient to form a paste.

AN EXTERNAL APPLICATION FOR RHEUMATISM AND ANY SWELLING.—Put in a two ounce bottle half an ounce of wormwood oil, then fill to two-thirds with hartshorn and complete with sweet oil and camphor oil in equal quantity. If the camphor oil does not agree with your case, leave it out and fill with sweet oil only.

GREAT PAIN EXTRACTOR.—Spirits of ammonia, one ounce; laudanum, one ounce; oil of origanum, one ounce, mutton tallow, half pound; combine the articles with the tallow when it is nearly cool.

COUGH SYRUP.—Put one quart hoarhound to one quart water, and boil it down to a pint; add two or three sticks of licorice and a table-

spoonful of essence of lemon. Take a tablespoonful of the syrup three times a day, or as often as the cough may be troublesome. The above recipe has been sold for \$100. Several firms are making much money by its manufacture.

SUPERIOR COLOGNE WATER.—Alcohol, one gallon; add oil of cloves, lemon, nutmeg and bergamot, each one drachm; oil neroli, three and a half drachms; seven drops of oils of rosemary, lavender and cassia; half a pint of spirits of nitre; half a pint of elder-flower water. Let it stand a day or two, then take a colander and at the bottom lay a piece of white cloth, and fill it up, one-fourth of white sand, and filter through.

COUGH LOZENGES.—Powdered lactucarium, two drachms; extract of licorice root, twelve drachms; powdered squills, fifteen grains; refined sugar, six ounces; mucilage of tragacanth sufficient to mix. Make into two hundred and forty equal lozenges.

ALMOND CREAM.—(There is nothing equal to this cream for softening and whitening the hands.) Mix honey, almond meal and olive oil into a paste to be used after washing with soap. Castile soap is best for use; it will cure a scratch, or cut, and prevents any spot.

CREAM OF ROSES.—Take one teacupful of rose water, as much sub-carbonate of potash as will lie on a shilling, and half an ounce of oil of sweet almonds. Let all be well shaken together until it becomes thoroughly mixed, which will take some time. This is one of the best face washes made, and is entirely harmless.

EXCELLENT POMADE.—Three ounces of olive oil, three-quarters of a drachm of the oil of almonds, two drachms of palm oil, half an ounce of white wax, a quarter of a pound of lard, and three-quarters of a drachm of the essence of bergamot. This pomade is excellent for strengthening the hair, promoting the growth of whiskers and moustaches, and preventing baldness.

FLORIDA WATER.—Half pint of proof spirits, two drachms oil lemon, half drachm oil rosemary. Mix.

FLORIDA WATER.—Dissolve in one-half gallon 90 per cent. alcohol, one ounce each of lavender, oil of bergamot and oil of lemon; oil of cloves and cinnamon, one drachm each; add one gallon of water and filter. Put up in three ounce vials retails for twenty-five cents.

TO MAKE EAU DE COLOGNE.—Rectified spirits of wine, four pints; oil of bergamot, one ounce; oil of lemon, half an ounce; oil of rosemary, half a drachm; oil of neroli, three-quarters of a drachm; oil of English lavender, one drachm; oil of orange, one drachm. Mix well, and then filter. If these proportions are too large, smaller ones may be used.

ORIGINAL FRENCH COLOGNE.—Oil of lavender, oil of bergamot, oil of lemon, oil of neroli, each one ounce; oil of cinnamon, half an ounce; spirits of rosemary, fifteen ounces; highly rectified spirits, eight pints. Let them stand fourteen days; then distill in a water bath. Put up in fancy bottles retails for twenty-five cents an ounce.

LAVENDER WATER.—Best English lavender, four drachms; oil of cloves, half a drachm; musk, five grains; best spirits of wine, six ounces; water, one ounce. Mix the oil of lavender with a little spirits first, then add the other ingredients and let it stand, being kept well corked for at least two months before it is used, shaking it frequently.

ROSE WATER.—Take half an ounce of white sugar, and drop into it two or three drops of attar of rose; then grind very fine in a mortar. After it is well ground into fine powder, pour on it half a pint of cold water, grind well for a few moments, and then mix it all with one gallon of cold water. Let it stand for three or four days, and strain through fine muslin.

FRENCH MILK OF ROSES.—Two and one-half pints of rose water, one half pint of rosemary water, two ounces of tincture of storan, two ounces of tincture of benzoin, one half ounce of esprit de rose. First mix the rose water and rosemary water, and then add the other ingredients. This is a useful wash for the complexion.

VIOLET POWDER.—Wheat starch, six parts by weight; orris root powder, two. Having reduced the starch to an impalpable powder, mix thoroughly with the orris root and then perfume with attar of lemon, attar of bergamot and attar of cloves, using twice as much of the lemon as either of the other attars.

PEARL WATER FOR THE COMPLEXION.—Take castile soap, one pound; water, one gallon. Dissolve; then add alcohol, one quart; oil of rosemary and oil of lavender, of each two drachms. Mix well.

FRECKLE LOTION.—Muriate of ammonia, one drachm; cologne water, two drachms; distilled water, seven ounces; mix and use as a wash. It contains nothing injurious.

PEARL POWDER FOR THE COMPLEXION.—Take white bismuth, one pound; starch powder, one ounce; orris powder, one ounce. Mix, and sift through lawn. Add a drop of attar of roses or neroli.

LIQUID ROUGE FOR THE COMPLEXION.—Four ounces of alcohol, two ounces of water, twenty grains of carmine, twenty grains of ammonia, six grains of oxalic acid, six grains of alum. Mix.

COMPLEXION POMATUM.—Mutton grease, one pound; oxide of bismuth, four ounces; powdered French chalk, two ounces. Mix.

TURKISH ROUGE.—Take half a pint of alcohol and one ounce of alkanet; macerate ten days and pour off the liquid, which should be bottled. This is the simplest and one of the best of the kind.

COSMETIC.—Take half a cup of water, and add to it a tablespoonful of glycerine. Add to this a tablespoonful of alcohol and a teaspoonful of cologne. Apply with a sponge or soft cotton cloth.

COSMETIC.—Melt one pound of soft soap over a slow fire, with half a pint of sweet oil and add a teacupful of fine sand. Stir the mixture together until cold.

COSMETIC.—An infusion of horseradish and milk will make a most excellent, harmless and effective cosmetic.

COLD CREAM.—This is a simple and cooling ointment, exceedingly serviceable for rough or chapped hands, or for keeping the skin soft. It is very easily made: Take half an ounce of white wax and put it into a small basin, with two ounces of almond oil. When quite melted add two ounces of rose water. This must be done very slowly, little by little, and, as you pour it in, beat the mixture smartly with a fork to make the water incorporate. When all is incorporated the cold cream is complete, and you may pour it into jars for future use.

ALMOND PASTE.—Take of bleached almonds four ounces and the white of one egg; beat the almonds to a smooth paste in a mortar, then add the white of egg and enough rose water, mixed with one half its weight of spirits of wine, to give the proper consistence. This paste is used as a cosmetic, to beautify the complexion, and also as a remedy for chapped hands, etc.

ERUPTION OINTMENT FOR FROSTED FEET, ETC.—Chrome yellow and hog's lard.

CANCER OINTMENT.—White arsenic, sulphur, powdered flowers of lesser spearwort, and stinking chamomile, levigated together, and formed into a paste with white of egg.

PILE OINTMENT.—Powdered nutgall, two drachms; camphor, one drachm; melted wax, one ounce; tincture of opium, two drachms. Mix.

CHILBLAIN OINTMENT.—Take of gall-nuts, in very fine powder, one drachm avoirdupois; spermaceti cerate, seven drachms. Mix, add pure glycerine, two drachms, and rub the whole to a uniform mass. An excellent application to obstinate, broken chilblains, particularly when used as a dressing. When the parts are very painful, one ounce of compound ointment of galls may be advantageously substitute for the galls and cerate ordered above.

FOOT OINTMENT FOR ALL DOMESTIC ANIMALS.—Equal parts of tar, lard, and resin, melted together.

GOLDEN OINTMENT.—Orpiment mixed with lard to the consistency of an ointment.

BARBER'S ITCH OINTMENT.—Olive oil, one pound; suet, one pound; alkanet root, two ounces. Melt, and macerate until colored; then strain, and add three ounces each of alum, nitre, and sulphate of zinc, in very fine powder, adding vermilion to color it, and oil of anise-seed, lavender and thyme to perfume.

MAGNETIC OINTMENT.—Elderbark, spikenard and yellow dock roots, of each one pound; boil in two gallons of water down to one; then press the strength out of the roots, and boil the liquid down to half a gallon; add eight pounds of the best resin, one pound beeswax, and tallow enough to soften. Roll into rolls, and apply by warming and spreading on linen.

ARNICA LINIMENT.—Add to one pint of sweet oil two tablespoonfuls of tincture of arnica. Good for wounds, stiff joints, rheumatism and all injuries.

EFFERVESCING LEMONADE.—Boil two pounds of white sugar with one pint of lemon juice ; bottle and cork. Put a tablespoonful of the syrup into a tumbler about three parts full of cold water, add twenty grains of carbonate of soda, and drink.

COOL SUMMER DRINK.—Take one pound finely powdered loaf sugar, one ounce of tartaric or citric acid, and twenty drops of essence of lemon. Mix immediately and keep very dry. Two or three spoonfuls of this, stirred briskly in a tumbler of water, will make a very pleasant glass of lemonade.

TABLE BEER.—A cheap and agreeable table beer is made as follows: Take fifteen gallons of water and boil one-half, putting the other into a barrel ; add the boiling water to the cold, with one gallon of molasses and a little yeast. Keep the bung hole open till the fermentation is completed.

ROOT BEER.—To make Ottawa root beer, take one ounce each of sassafras, allspice, yellow dock and wintergreen, half an ounce each of wild cherry bark and coriander, a quarter of an ounce of hops, and three quarts of molasses. Pour boiling water on the ingredients, and let them stand twenty-four hours. Filter the liquor, and add half a pint of yeast, and it will be ready for use in twenty-four hours.

MILK LEMONADE.—Dissolve three-quarters of a pound of loaf sugar in one pint of boiling water, and mix with them one gill of lemon juice and one gill of sherry ; then add three gills of cold milk. Stir the whole well together and strain it.

NICE LEMON BEER.—Slice two good sized lemons, put with them one pound of sugar ; over these pour one gallon of boiling water, and when about milk warm add one-third cup of yeast. Let it stand over night, and it is ready for use.

SPRUCE BEER.—Essence of spruce, half a pint ; bruised pimento and ginger, each four ounces ; water, three gallons. Boil five or ten minutes, then strain, and add eleven gallons of warm water, a pint of yeast, and six pints of molasses. Allow the mixture to ferment for twenty-four hours.

COUGH BALL FOR HORSES.—Pulverized ipecac, three-quarters of an ounce ; camphor, two ounces ; squills, half an ounce. Mix with honey to form into a mass, and divide into eight balls. Give one every morning.

TO MAKE FRUIT EXTRACTS, ETC.—Good alcohol, one quart ; oil of lemon, two ounces. Break and bruise the peel of four lemons, and add to them alcohol for a few days, then filter. For currants, peaches, raspberries, pineapples, strawberries, blackberries, etc., take alcohol and water half and half, and pour over the fruit, entirely covering it, and let it stand for a few days. For essence of cinnamon, nutmeg, mace, vanilla, etc., pulverize either article thoroughly, and put about two ounces of the resulting powder to each pint of reduced alcohol, agitate the mixture frequently for two weeks, then filter and color as desired.

ESSENCE FROM FLOWERS.—Procure a quantity of the petals of any flowers which have an agreeable fragrance; card thin layers of cotton, which dip into the finest Florence or Lucca oil; sprinkle a small quantity of fine salt on the flowers alternately until an earthen vessel or wide-mouthed glass bottle is full. Tie the top close with a bladder, then lay the vessel in a south aspect to the heat of the sun, and in fifteen days, when uncovered, a fragrant oil may be squeezed away, leaving a whole mass quite equal to the high-priced essences.

SACHET POWDERS FOR PERFUMING DESKS AND BUREAUS.—No. 1. Half an ounce of orris root powdered, four drops attar of rose, one and a half ounces of powdered starch. No. 2. Two ounces of orris root powdered, ten drops of essence of ambergris, four drops of oil of neroli. No. 3. Gum benzoin half a drachm, musk two grains, ambergris, four grains; storax, half a drachm, one ounce powdered cloves; half an ounce powdered orange peel. Mix each recipe separately, put in cotton wool, and keep in desk or bureau drawers.

SCENT POWDER.—A good recipe for scent powder to be used for wardrobes, boxes, etc., far finer than any mixture sold at the shops, is the following: Coriander, orris root, rose leaves and aromatic calamus, each one ounce; lavender flowers, ten ounces; rhodium, one-fourth of a drachm; musk, five grains. These are to be mixed and reduced to a coarse powder. This scents clothes as if fragrant flowers had been pressed in their folds.

ESSENCE OF AMBERGRIS.—Spirits of wine, half a pint; ambergris, twenty-four grains. Let it stand for three days in a warm place, and filter.

MUSK.—Artificial musk is made by dropping three and a half ounces of nitric acid on one ounce of rectified oil of amber. In a day or two, a black substance is produced which smells similar to genuine musk.

BOUQUET DE LA REINE.—Take one ounce of essence of bergamot, three drachms of English oil of lavender, half a drachm of oil of cloves, half a drachm of aromatic vinegar, six grains of musk and one pint and a half of rectified spirits of wine. Distill.

PERFUME FOR HANDKERCHIEFS.—Oil of lavender, three fluid drachms; oil of bergamot, three fluid drachms; extract of ambergris, six minims; camphor, one grain; spirits of wine, one pint. To be well shaken every day for a fortnight and then filtered.

ESSENCE OF LEMON.—Spirits of wine, half a pint; fresh lemon peel, four ounces.

ESSENCE OF CLOVES.—Spirits of wine, half a pint; bruised cloves, one ounce.

ESSENCE FOR THE HEADACHE.—Spirits of wine, two pounds; rock-alum, in fine powder, two ounces; camphor, four ounces; essence of lemon, half an ounce; strong water of ammonia, four ounces. Stop the bottle close, and shake it daily for three or four days.

ESSENCE OF CEDRAT.—Essence of bergamot, one ounce; essence of neroli, two drachms.

ESSENCE OF LAVENDER.—Essential oil of lavender, three and a half ounces; rectified spirits, two quarts; rose water, half a pint; tincture of orris, half a pint.

ESSENCE OF NEROLI.—Spirits of wine, half a pint; orange peel, cut small, three ounces; powdered orris root, one drachm; musk, two grains.

ESSENCE OF MUSK.—Take one pint proof spirit and add two drachms musk. Let it stand a fortnight, with frequent agitation.

ESSENCE OF BERGAMOT.—Spirits of wine, half a pint; bergamot peel, four ounces.

NEW YORK BARBER'S STAR HAIR OIL.—Castor oil six and a half pints, alcohol, one and a half pints, oil of citronella, one-half ounce. Mix well. Put up in four ounce bottles retails for twenty-five cents.

PROF. HALL'S MAGIC COMPOUND.—For the radical cure of baldness and promoting the growth of the hair and whiskers. Thousands of dollars can be made selling this one article.

RECIPE.—Take one ounce of castor oil, dissolve in one quart of 95 per cent. alcohol, and one ounce of tincture of cantharides, two ounces tincture of catechu, two ounces lemon juice, one ounce tincture of cinchona; perfume with one-half ounce oil cinnamon and rosemary.

BUFFALO OIL.—Take the best lard oil and perfume it well with equal parts of oil garden lavender and oil lemon.

MACASSAR OIL.—Olive oil, one pound; oil origanum, one drachm; oil rosemary, one scruple. Mix.

OIL OF ROSES FOR THE HAIR.—Olive oil, one quart; attar of roses, one drachm; oil of rosemary, one drachm; mix. It may be colored by steeping a little alkanet root in the oil (with heat) before scenting it. It strengthens and beautifies the hair.

POMADE FOR THE HAIR.—Ingredients: One quarter pound of lard, two pennyworth of castor oil; scent. *Mode.* Let the lard be unsalted; beat it up well; then add the castor oil, and mix thoroughly together with a knife, adding a few drops of any scent that may be preferred. Put the pomatum into pots, which keep well covered to prevent turning rancid.

DUPUY POMADE.—Beef marrow, six ounces; nervine balsam, two ounces (this is made by melting together four ounces each of beef marrow and oil of mace, and adding two drachms of balsam of tolu, and one drachm each of oil of cloves and camphor, dissolved in one-half ounce of rectified spirit); Peruvian balsam, two ounces; oil of almonds, one and a half ounce; extract of cantharides, sixteen grains. Melt the marrow and nervine balsam with the oil, strain, add the balsam of Peru, and lastly the extract, dissolved in a drachm of rectified spirits.

LIQUID FOR FORCING THE BEARD.—Cologne, two ounces; liquid hartshorn, one drachm; tincture cantharides, two drachms; oil rosemary, twelve drops; lavender, twelve drops. Apply to the face daily, and await results. Said to be reliable.

HAIR RESTORATIVE.—Four drachms oxide bismuth, four drachms spermaceti, four ounces pure hog's lard. The lard and spermaceti should be melted together. When nearly cool, stir in the bismuth and perfume. Put in pots and label. Prevents the hair turning gray; restores gray hair.

TO REPAIR CRACKS, HOLES, ETC., IN WALLS—Equal parts of plaster of Paris and white sand—such as is used in most families for scouring purposes—mixed with water to a paste, applied immediately and smoothed with a knife or flat piece of wood, will make the broken place “as good as new.” The mixture hardens very quickly, so it is best to prepare but a small quantity at a time.

PRESERVING CAST-IRON FROM RUST.—The *English Mechanic* says cast-iron may be best preserved from rust “by heating it till, if touched with flax, it causes it to frizzle,” and then plunging into a vat of mixed oil and grease. It is said that the oleaginous matter actually penetrates the pores and prevents oxidation for a very long time, while it does not prevent painting, if desirable, afterward.”

WALNUT HAIR DYE.—The simplest form is the expressed juice of bark or shell of green walnuts. To preserve this juice, a little rectified spirits may be added to it, with a few bruised cloves, and the whole digested together, with occasional agitation for a week or fortnight, when the clear portion is decanted, and, if necessary, filtered. Sometimes only a little common salt is added to preserve the juice. It should be kept in a cool place.

HAIR DYE.—Litharge, two parts; slaked lime, one part; chalk, two parts, all finely powdered, and accurately mixed. When required for use, mix the powder with warm water, and dip a brush in the mixture, and rub the hair well with it. After two hours let the hair be washed.

HAIR DYE.—Nitrate of silver, eleven drachms; nitric acid, one drachm; distilled water, one pint; sap green, three drachms; gum arabic, one drachm. Mix.

HAIR DEPILATORY.—Quicklime, sixteen ounces; pearl ash, two ounces; liver of sulphur, two ounces. Reduce to a fine powder, and keep it in a close bottle. To be mixed with water, and applied to the skin; scrape off in two or three minutes with a wooden knife. Use caution to prevent injury.

TO PREVENT THE HAIR FROM TURNING GRAY.—Oxide of bismuth, four drachms; spermaceti, four drachms; pure hog's lard, four ounces. The lard and spermaceti should be melted together, and when they begin to cool stir in the bismuth. It may be perfumed to your liking.

TO REMOVE FRECKLES AND TAN.—The most celebrated compound ever used for the removal of freckles was called *Unction de Maintenon*, after the celebrated Madame de Maintenon. It is made as follows: venice soap, one ounce; lemon juice, one-half ounce; oil of bitter almonds, one-quarter ounce; deliquated oil of tartar, one-quarter ounce; oil of rhodium, three drops. First dissolve the soap

in the lemon juice, then add the two oils and place the whole in the sun till it acquires the consistence of ointment, and then add the oil of rhodium. Anoint the freckly face at night with this unction, and wash in the morning with pure water, or if convenient, with a mixture of elder-flower and rose water.

2. Take two ounces lemon juice; one-half drachm of powdered borax and one drachm of sugar. Mix together and let them stand in a glass bottle for a few days, then rub on the face occasionally.

CURE FOR CATARRH.—A medical authority asserts that the severest catarrh cold can be removed in about ten hours by a mixture of carbolic acid, ten drops, tincture of iodine and chloroform, each 7.5 drops. A few drops of the mixture should be heated over a spirit lamp in a test tube, the end of which should be applied to the nostrils as volatilization is effected. The operation should be repeated in about two minutes, when after the patient sneezes a number of times, the troublesome symptoms rapidly disappear.

REMEDY FOR SORE THROAT.—"Simple, cheap, and sure," is the verdict of one who has tried the following remedy for a sore throat. The necessary drugs are an ounce of camphorated oil and five cents' worth of chlorate of potash. Whenever any soreness appears in the throat, put the potash in half a tumbler of water, and with it gargle the throat thoroughly, then rub the neck thoroughly with the camphorated oil at night before going to bed, and also pin around the throat a small strip of woolen flannel.

VERY ADHESIVE MUCILAGE.—The addition of a solution of thirty grains of crystallized sulphate of alumina in 300 grains of water, to a solution of 1050 grains of gum arabic in 2625 grains of water, affords a mucilage that will fasten lightly sized paper, printing paper, etc., or wood to wood, paper to metal, etc.

A GOOD DISINFECTANT.—Dissolve half a drachm of nitrate of lead in a pint of boiling water, then dissolve two drachms of common salt in eight or ten quarts of water; when both are thoroughly dissolved, pour the two mixtures together, and, when the sediment has settled, you have a pail of clear fluid, which is the saturated solution of the chloride of lead. A cloth saturated with the liquid and hung up in a room will at once sweeten a fetid atmosphere. Poured down a sink, water-closet or drain, or on any decaying or offensive object, it will produce the same result.

CHOLERA REMEDY.—Spirits of wine, one ounce; spirits of lavender, quarter ounce; spirits of camphor, quarter ounce; compound tincture of benzoin, half an ounce; oil of origanum, quarter ounce; twenty drops on moist sugar. To be rubbed outwardly also.

TOOTH-ACHE REMEDY.—Finely powdered alum, one drachm; spirit nitric ether, seven drachms.

PIMPLE REMEDIES—1. There are many kinds of pimples, some of which partake almost of the nature of ulcers, which require medical treatment; but the small red pimple which is most common, may be removed by applying the following twice a day: Sulphur water,

one ounce; acetated liquor of ammonia, one-quarter ounce; liquor of potassa, one grain; white wine vinegar, two ounces; distilled water, two ounces. These pimples are sometimes cured by frequent washing in warm water, and prolonged friction with a coarse towel. The cause of these pimples is obstruction of the skin and imperfect circulation.

2. Wash the face twice a day in warm water and rub dry with a coarse towel. Then with a soft towel rub in a lotion made of two ounces of white brandy, one ounce of cologne, and one-half ounce of liquor of potassa. Persons subject to skin eruptions should avoid very salt or fat food. A dose of Epsom salts occasionally might prove beneficial.

3. Wash the face in a solution of carbolic acid, allowing one teaspoonful to a pint of water. This is an excellent and purifying lotion, and may be used on the most delicate skins. Be careful about letting this wash get into the eyes.

4. Oil of sweet almonds, one ounce; fluid potash, one drachm. Shake well together, and then add rose water, one ounce; pure water, six ounces. Mix. Rub the pimples or blotches for some minutes with a rough towel, and then dab them with the lotion.

5. Dissolve one ounce of borax, and sponge the face with it every night. When there are insects, rub on flour of sulphur, dry, after washing, rub well and wipe dry, use plenty of castile soap.

6. Dilute corrosive sublimate with oil of almonds. A few days' application will effectually remove them.

TO REMOVE BLACK SPECKS OR "FLESH WORMS." Sometimes little black specks appear about the base of the nose, or on the forehead, or in the hollow of the chin, which are called "flesh-worms," and are occasioned by coagulated lymph that obstructs the pores of the skin. They may be squeezed out by pressing the skin, and ignorant people suppose them to be little worms. They are permanently removed by washing with warm water, and severe friction with a towel, and then applying a little of the following preparation: liquor of potassa, one ounce; cologne, two ounces; white brandy, four ounces.

CURE FOR DIPHTHERIA AND SCARLET FEVER.—Take, say, a gill of vinegar, one teaspoonful of table-salt, and slice up four or five large onions in it, and let it heat in a pan. Put it in a flannel bag, squeeze it out lightly, and pin around the child's throat as hot as it can be borne, and also put the same on the bottoms of the feet. Change the application morning, noon, and night, for three or four days, and it will cure the worst case. It will produce abscesses on the surface of the skin. The same is sure to cure the worst case of scarlet fever, if used in the same way.

A HINT TO CONSUMPTIVES.—A physician of no little experience says he has known several consumptive patients cured by observing the following rules: Live temperately, avoid spirituous liquors, wear flannel next the skin, and take every morning half a pint of new milk, mixed with a wine-glass full of expressed juice of green hoarhound.

CURING CROUP.—Croup can be cured in one minute, and the remedy is simply alum and sugar. The way to accomplish the deed is to take a knife and grate or shave off in small particles about a teaspoonful of alum, then mix it with twice its quantity of sugar to make it palatable, and administer it as quickly as possible. Almost instantaneous relief will follow.

TO PUT A GLOSS ON LINEN.—Add to the starch a little sugar or white wax or butter, iron in the usual way. Then pass a damp cloth over the linen, lay it on a smooth board, and polish with a polishing-iron made for the purpose and sold in house furnishing stores for about a dollar.

TO CLEAN BLACK KID GLOVES.—Take a teaspoonful of salad oil, put a few drops of ink in it, and rub it over the gloves with the tip of a feather; then let them dry in the sun.

TO MAKE AWNINGS WATERPROOF.—Plunge first into a solution containing twenty per cent. soap, and afterward in another solution containing the same percentage of copper. Wash afterwards.

CHEAP ICE CREAM.—Milk, six quarts; corn-starch, half a pound. First dissolve the starch in one quart of the milk and then mix all together, and just simmer a little (not to boil). Sweeten and flavor to suit your taste.

FRENCH VANILLA ICE CREAM.—One quart rich sweet cream, half a pound of granulated sugar, and the yolks of six eggs. Place the cream and sugar in a porcelain kettle on the fire, and allow them to come to a boil; strain through a hair sieve, and having the eggs well beaten add slowly to the cream and sugar while hot, at the same time stirring rapidly. Place on the fire again, and stir for a few minutes; then pour into the freezer and flavor with one tablespoonful of vanilla.

CRUSHED STRAWBERRY ICE CREAM.—Three pints best cream, twelve ounces pulverized white sugar, two whole eggs, and two tablespoonfuls of extract of vanilla. Mix in a porcelain basin, place over the fire, and stir constantly until it reaches a boiling point. Strain through a hair sieve into the freezer, select, hull and crush to a pulp one quart ripe strawberries, with six ounces pulverized sugar. Add this pulp to the frozen cream, mix well, and give the freezer a few additional turns to harden.

COFFEE ICE CREAM.—One quart best cream, half a pint strong coffee, fourteen ounces white pulverized sugar, yolks of eight eggs. Mix in a porcelain-lined basin; place on the fire to thicken, and strain through a hair sieve. Put into a freezer and freeze.

LEMON ICE CREAM.—One quart best cream, eight ounces of pulverized sugar, three whole eggs, and a tablespoonful extract of lemon. Place on the fire, stirring continually until it reaches the boiling point, then remove and strain into the freezer.

ITALIAN ORANGE ICE CREAM.—One pint of best cream, twelve ounces of pulverized sugar, the juice of six oranges, two teaspoonfuls of orange extract, the yolks of eight eggs, and a pinch of salt.

ORANGE ICE.—Squeeze the juice from six large oranges and two lemons; pour about five gills of boiling water over the broken peel and pulp and let it stand until cool; then strain and add the water to the orange and lemon juice. Sweeten to taste with loaf sugar and freeze.

LEMON WATER ICE.—Rub on sugar the clear rinds of lemons; squeeze the juice of twelve lemons, strain them, boil the sugar into a strong, thick syrup; add to the juice half a pint of water, or good barley water, sweeten it with your syrup, and add the white of an egg and jelly.

RED CURRANT FRUIT ICE.—Put three pints of ripe currants, one pint of red raspberries, half a pint of water in a basin. Place on the fire and simmer for a few minutes, then strain. Add twelve ounces of sugar and half a pint of water.

RASPBERRY WATER ICE.—Press sufficient raspberries through a hair sieve to give three pints of juice, and add one pound of pulverized sugar and the juice of one lemon.

ALMOND CANDY.—Take one pound of sugar and about half a pint of water; put in part of the white of an egg to clarify the sugar; let this boil a few minutes, and remove any scum that rises. When the sugar begins to candy drop in the dry almonds; first, however, you should blanch the nuts by pouring hot water over them, and letting them stand in it a few minutes; then the skin will slip off readily. Spread the candy on buttered plates to cool.

SUGAR TAFFY.—One pound sugar put in a pan with half tumbler cold water; add one teaspoonful cream tartar, lump of butter size of hickory nut, one teaspoonful vinegar (do not stir at all); boil slowly twenty-five minutes, and drop a little into cold water, and if crispy it is done; turn on to plates, and pour on flavoring—lemon and vanilla, half each; pull till very white.

CHOCOLATE CANDY.—One cupful brown sugar, one cupful white, one cupful molasses, one cupful milk, one cupful chocolate, butter the size of walnut.

TO SUGAR OR CRYSTALLIZE POP-CORN.—Put into an iron kettle one tablespoonful of water and one teacupful of white sugar; boil until ready to candy, then throw in three quarts of corn nicely popped; stir briskly until the candy is evenly distributed over the corn; set the kettle from the fire and stir until it is cooled a little, and you have each grain separate and crystallized with the sugar. Care should be taken not to have too hot a fire, lest you scorch the corn when crystallizing. Nuts of any kind prepared this way are delicious.

WALNUT CANDY.—The meats of hickory nuts, English walnuts, or black walnuts may be used according to preference in that regard. After removal from the shells in as large pieces as practicable, they are to be placed on the bottom of tins, previously greased, to the depth of about a half inch. Next boil two pounds of brown sugar, a half pint of water, and one gill of good molasses, until a portion of the mass hardens when cooled. Pour the hot candy on the meats, and allow it to remain until hard.

BUTTER SCOTCH.—Take two cupfuls of sugar, two tablespoonfuls of water, piece of butter the size of an egg. Boil without stirring until it hardens on a spoon. Pour out on buttered plates to cool.

LICORICE LOZENGES.—Extract of licorice, one pound; powdered white sugar, two pounds. Mix with mucilage made with rose water.

FIG CANDY.—Take one pound of sugar and one pint of water, set over a slow fire. When done, add a few drops of vinegar, and a lump of butter, and pour into pans in which split figs are laid.

RAISIN CANDY.—Can be made in the same manner, substituting stoned raisins for the figs. Common molasses candy is very nice with all kinds of nuts added.

SCOTCH BUTTER CANDY.—Take one pound of sugar, one pint of water, dissolve and boil. When done, add one tablespoonful of butter, and enough lemon juice and oil of lemon to flavor.

TO SELECT DAIRY COWS.—Cows of extraordinary milking qualities are as often found among the native as among grade and thorough-bred animals; and as a rule, the progeny of these extra milkers become the best cows, and every heifer-calf from such should be raised, except it fails to carry the mark indicating a good milker. This mark is the upward growth of the hair on the inside of the thigh of the calf from immediately behind the udder, as high as the hair goes. If it be found running up in a very smooth and unbroken column—all other things being equal—with good care and continued fine growth, there will scarcely be a failure. But whatever extraordinary qualities the cow may possess, unless this mark is found on the calf, it is not worth raising for a dairy cow.

TO REMOVE LUMPS IN UDDERS.—Take poke-root and chop it up fine and beat it into pumice; take a teacupful and put in a quart of meal and feed to a cow whose udder has lumps in it, and they are removed at once. The remedy is infallible.

CURE FOR SWELLED BAGS IN COWS.—An excellent remedy for swelled bags in cows, caused by cold, etc., is gum camphor one-half ounce, to sweet oil two ounces; pulverize the gum, and dissolve over a slow fire.

TO INCREASE THE FLOW OF MILK IN COWS.—Give your cows three times a day, water slightly warm, slightly salted, in which bran has been stirred at the rate of one quart to two gallons of water. You will find if you have not tried this daily practice, that the cow will give twenty-five per cent. more milk, and she will become so much attached to the diet that she will refuse to drink clear water unless very thirsty, but this mess she will drink at almost any time, and ask for more. The amount of this drink necessary is an ordinary water pail full each time, morning, noon, and night. Avoid giving cows "slops," as they are no more fit for the animal than the human.

TO KEEP MILK SWEET, AND SWEETEN SOUR MILK.—Put into the milk a small quantity of carbonate of magnesia.

THORLEY'S CONDIMENTAL FOOD.—The following is a formula to make one ton of the food: Take of Indian meal 900 pounds, locust beans finely ground 600 pounds, best linseed cake 300 pounds, powdered turmeric and sulphur of each forty pounds, saltpetre twenty pounds, licorice, twenty-seven pounds, ginger three pounds, anise seed four pounds, coriander and gentian of each ten pounds, cream of tartar two pounds, carbonate of soda and levigated antimony each six pounds, common salt thirty pounds, Peruvian bark four pounds, fenugreek twenty-two pounds; mix thoroughly.

TO RESTORE RANCID BUTTER.—1. Rancid butter may be restored by melting it in a water bath with some fresh burnt and coarsely powdered animal charcoal (which has been thoroughly freed from dust by sifting), and strain it through clean flannel.

2. A better method is to well wash the butter, first with good new milk, and next with cold spring water. Butyric acid, on the presence of which rancidity depends, is freely soluble in fresh milk.

3. Use one pint of water to each pound of butter, previously adding twenty grains chloride of lime to each pint of water; wash well the butter in this mixture, afterward re-wash in cold water and salt.

COLORING BUTTER.—As a rule, it is absolutely essential in the winter to color butter in order to make it marketable, or at all attractive as an article of table use at home. There may be a possible exception to this rule, in cases where cows are fed largely upon yellow corn, pumpkins, carrots, etc., but this does not lessen the importance of the rule. Of the various substances used in coloring butter, we think that carrots (of the deep yellow variety) give the most natural color and the most agreeable flavor. Annotto, however, is principally used, and with most satisfactory results. Some of the most celebrated butter makers in the country color their butter with pure annotto, giving it a rich, deep orange color. If carrots are used, take two large-sized ones, clean them thoroughly, and then with a knife scrape off the yellow exterior, leaving the white pith; soak the yellow part in boiling milk for ten or fifteen minutes. Strain boiling hot into the cream; this gives the cream the desired temperature, colors it nicely, and adds to the sweetness of the butter.

MUCH BUTTER FROM LITTLE MILK.—Take four ounces pulverized alum, one-half ounce pulverized gum arabic, fifty grains pepsin; place it in a bottle for use as required. A teaspoonful of this mixture added to one pint of new milk will upon churning, make one pound of butter. Agents are selling this secret for \$5.

TOOTH WASH—TO REMOVE BLACKNESS.—Pure muriatic acid one ounce, water one ounce, honey two ounces; mix. Take a tooth brush, and wet it freely with this preparation, and briskly rub the black teeth, and in a moment's time they will be perfectly white; then immediately wash out the mouth with water, that the acid may not act upon the *enamel* of the teeth.

TO IMPROVE THE WOOL OF SHEEP, BY SMEARING.—Immediately after the sheep are shorn, soak the roots of the wool that remains all over with oil, or butter, and brimstone; and, three or four days after-

ward, wash them with salt and water. The wool of the next season will not be much finer, but the quantity will be in greater abundance. It may be depended upon, that the sheep will not be troubled with the scab or vermin that year. Salt water is a safe and effectual remedy against maggots.

TO MARK SHEEP WITHOUT INJURY TO THE WOOL.—To thirty spoonfuls of linseed oil, add two ounces of litharge, one ounce of lampblack; boil all together, and mark the sheep therewith.

PASTE FOR PAPER HANGINGS, BOOKS, PAPER BOXES, ETC.—Good wheat flour, sifted, four pounds, make it into a stiff batter with cold water in a pail, beat it well to break the lumps, then add pulverized alum, two ounces. Into this pour boiling water, hissing hot from the fire, stirring the batter thoroughly all the time. As it cooks it swells and loses its white color, and when cold, will make about three quarters of a pail of thick paste. Thin with cold water to adapt it for easy use with the brush. For painted or varnished walls, add one-half ounce pulverized rosin to each two quarts paste, and reduce the mass with thin gum arabic or glue water. A little pulverized corrosive sublimate will enhance the keeping qualities of paste, but alum used as above will do very well.

TO REMOVE OLD PAINT.—Sal soda, two pounds; lime, one-quarter pound; hot water, one gallon; rummage all together and apply to the old paint while warm. It will soon loosen the paint so that you can easily remove it. Another simple method is to sponge over your old paint with benzine, set it on fire, and you can then flake off the paint as quick as you like. Do not attempt to go over too much surface at a time, otherwise you might get more to do than you can attend to.

TO RESTORE THE COLOR OF BLACK KID BOOTS.—Take a small quantity of good black ink, mix it with the white of an egg, and apply to the boots with a soft sponge.

Trappers' and Anglers' Secrets for Game and Fish.

The following secrets apply to all animals, as every animal is attracted by the peculiar odor in a greater or less degree; but it is best adapted to land animals, such as foxes, minks, sables, martins, wolves, bears, wildcats, etc.:

1. Take one-half pound strained honey, one-quarter drachm musk, three drachms oil of lavender, and four pounds of tallow. Mix the whole thoroughly together, and make it into forty pills or balls, and place one of these pills under the pan of each trap when setting it. This preparation will most wonderfully attract all kinds of animals, and trappers and others who use it will be sure of success.

2. **TO CATCH FISH.**—Put the oil of rhodium on the bait when fishing with a hook, and you will always succeed; or, take the juice of smallage or lovage, and mix with any kind of bait. As long as

there remain any kind of fish within many yards of your hook, you will find yourself busy pulling them out. Or, get over the water after dark, with a light and a dead fish that has been smeared with the juice of stinking gladwin. The fish will gather around you in large quantities, and can be easily scooped up.

8. FOR GAME AND FISH.—A few drops of oil of anise, or oil rhodium, on any trapper's bait, will entice any wild animal into the snare trap. India cockle mixed with flour dough, and sprinkled on the surface of still water, will intoxicate fish, rendering them insensible; when coming to the surface they can be lifted in a tub of fresh water to revive them, when they may be used without fear. Fish may also be caught in large numbers during the winter season by watching them through the ice and striking it with a mallet directly over where they happen to be. The shock stuns them, and they will rise, belly upwards towards the surface, when they are easily secured by breaking a hole in the ice.

4. FOR TRAPPING FOXES AND OTHER GAME.—Musk-rat musk and skunk musk mixed. Can be procured at the druggists, or from the animals themselves. To be spread on the bait of any trap. This receipt has been sold as high as \$75. *Another, costing \$50, for minks, etc.*—Unslaked lime, one-half pound; sal ammoniac, three ounces, or muriate of ammonia, three ounces. Mix and pulverize. Keep in a covered vessel a few days until a thorough admixture takes place. Sprinkle on the bait, or on the ground around the trap. Keep in a corked bottle.

FOOD FOR SINGING BIRDS.—Blanched sweet almonds, pulverized, one-half pound; pea meal, one pound; saffron, three grains; yolks of two hard boiled eggs. Reduce all to a powder by rubbing through a sieve. Place the mixture in a frying pan over a fire, stirring well, then set off to cool, and preserve in a closely corked bottle.

COMPOSITION FOR DRIVING OUT RATS, ETC.—Keep on hand a quantity of chloride of lime. The whole secret consists in scattering it dry around their haunts and into their holes, and they will leave at once, or a liberal decoction of coal tar placed in the entrance of their holes will do as well.

TO FREE MOLASSES FROM ITS SHARP TASTE AND TO RENDER IT FIT TO BE USED INSTEAD OF SUGAR.—Take twenty-four pounds molasses, twenty-four pounds water, and six pounds of charcoal, coarsely pulverized; mix them in a kettle, and boil the whole over a slow wood fire. When the mixture has boiled half an hour, pour it into a flat vessel, in order that the charcoal may subside to the bottom; then pour off the liquid, and place it over the fire once more, that the superfluous water may evaporate and the molasses be brought to its former consistence. Twenty-four pounds of molasses will produce twenty-four pounds of syrup.

TO KEEP FRUITS FRESH.—Rosin, two pounds; tallow, two ounces; bees-wax, two ounces. Melt slowly over the fire in an iron pot,

but don't boil. Take the fruit separately, and rub it over with pulverized chalk or whiting (to prevent the coating from adhering to the fruit), then dip it into the solution once, and hold it up a moment to set the coating, then pack away carefully in barrels, boxes, or on shelves, in a cool place. Unequalled for preserving apples, pears, lemons, etc.

TO DESTROY MOSS ON TREES.—Paint them with whitewash made of quick lime and wood ashes.

TO PROTECT FRUIT TREES FROM ATTACK OF MICE, ETC.—Tar, one part, tallow, three parts; mix. Apply hot to the bark of the tree with a paint brush.

CURE FOR LOCK-JAW, SAID TO BE POSITIVE.—Let any one who has an attack of lock-jaw take a small quantity of spirits of turpentine, warm it, and pour it on the wound—no matter where the wound is, or what its nature is—and relief will follow in less than one minute. Turpentine is also a sovereign remedy for croup. Saturate a piece of flannel with it, and place the flannel on the throat and chest—and in very severe cases three to five drops on a lump of sugar may be taken internally.

CERTAIN CURE FOR CROUP.—Goose oil and urine equal parts. Dose, one teaspoonful. A certain cure if taken in time.

THE NORTHERN-LIGHT BURNING FLUID.—Get good deodorized benzine, sixty to sixty-five gravity, and to each barrel of forty-two gallons add two pounds pulverized alum, three and one-half ounces gum camphor, and three and one-half ounces oil of sassafras, or two ounces oil bergamot; stir up and mix thoroughly together, and it will soon be ready for use. N. B.—As this fluid creates a much larger volume of light and flame than carbon oil, it is necessary to use either a high burner, such as the sun burner, to elevate the flame away from the lamp, in order to keep it cool, or instead thereof, to use a burner provided with a tube for the escape of the gas generated from the fluid, such, for instance, as the Meriden burner.

NERVE AND BONE LINIMENT.—Beef's gall, 1 quart; alcohol, one pint; volatile liniment, 1 pound; spirits of turpentine, 1 pound; oil origanum, four ounces; aqua ammonia, four ounces; tincture of cayenne, one-half pint; oil of amber, three ounces; tincture Spanish flies, six ounces; mix well.

CEPHALIC SNUFF.—Take asarabacca leaves, marjoram, light Scotch snuff, equal parts; grind and sift, use like common snuff.

DOWNER'S SALVE.—Bees wax, four ounces; opium, one-quarter ounce; sugar of lead, four ounces; melt the beeswax, and rub the lead up in the wax, then the opium, then one gill of sweet oil, incorporate all thoroughly together, spread lightly on cloth; good for buras, piles, etc.

ANOTHER SALVE.—Burgundy pitch, beeswax, white pine pitch, and resin, one ounce each; mutton tallow, 8 ounces; goose oil, one gill; tar, one gill; melt and mix thoroughly. A first-rate salve.

WHOOPIING COUGH SYRUP.—Best rum, one pint; anise oil, two ounces; honey, one pint; lemon juice, four ounces; mix. Dose for adults, one tablespoonful, three or four times per day; children, one teaspoonful, with sugar and water.

LIQUID OPODELDOC.—Warm brandy, one quart; add to it gum camphor, one ounce, sal ammoniac, one-quarter ounce; oils of organum and rosemary, each one-half ounce; oil wormwood, one-quarter ounce; when the oils are dissolved, add six ounces soft soap.

GREEN MOUNTAIN SALVE.—For rheumatism, burns, pains in the back or side, etc. Take two pounds resin; burgundy pitch, one-quarter pound; beeswax, one-quarter pound; mutton tallow, one-quarter pound; melt slowly; when not too warm, add oil of hemlock, one ounce; balsam fir, one ounce; oil of organum, one ounce; oil of red cedar, one ounce; Venice turpentine, one ounce; oil of wormwood, one ounce; verdigris, one-half ounce. The verdigris must be finely pulverized and mixed with the oils; then add as above, and work in cold water like wax till cold enough to roll; rolls five inches long, one inch diameter, sell for twenty-five cents.

ENGLISH REMEDY FOR CANCER.—Take chloride of zinc, blood-root pulverized, and flour, equal quantities of each, worked into a paste and applied. First spread a common sticking-plaster *much* larger than the cancer, cutting a circular piece from the centre of it a little larger than the cancer, applying it, which exposes a narrow rim of healthy skin; then apply the cancer plaster, and keep it on twenty-four hours. On removing it, the cancer will be found to be burned into, and appears the color of an old shoe-sole, and the rim outside will appear white and parboiled, as if burned by steam. Dress with slippery elm poultice until suppuration takes place, then heal with any common salve.

CHRONIC GOUT—TO CURE.—Take hot vinegar, and put into it all the table salt which it will dissolve, and bathe the parts affected with a soft piece of flannel. Rub in with the hand and dry the foot, etc., by the fire. Repeat this operation four times in twenty-four hours, fifteen minutes each time, for four days; then twice a day for the same period; then once, and follow this rule whenever the symptoms show themselves at any future time.

CURE FOR SNAKE BITES.—The inspector of police in the Bengal government reports that of 939 cases in which ammonia was freely administered 207 victims have recovered, and in the cured instances the remedy was not administered till about three and one-half hours after the attack, on the average of the fatal cases the corresponding duration of time was four and one-half hours.

REMEDY FOR SMALL POX.—Sulphate of zinc, one grain; foxglove (*digitalis*) one grain; sugar, one-half teaspoonful, mix with two teaspoonfuls of water, add four ounces of water; dose, one spoonful every hour, child in proportion. From experience it is known that nothing will break up this frightful disease sooner than continued and persevering bathing, with the water at a comfortable temperature.

RELIABLE SMALL POX REMEDY.—*Tested.*—A child nine years old was effectually cured of small pox by administering fifteen grains soda sulphice dissolved in milk, sweetened, every three hours. The entire body was oiled with crude petroleum applied by hand. Next morning the eruption was killed and dry; and the disease broken up. To prevent pitting with small pox, as soon as the disease is distinguished, apply an ointment made of lard and charcoal to the face, neck, hands, etc., and continue until all signs of suppurative fever has ceased. One case is worthy of notice, being that of a gentleman who suffered terribly for many days with this dreadful disease. Everything was done for him that medical skill could suggest, without giving the slightest relief. Finally, as a last resort, he was removed from the bed and placed in a warm bath; the transition was so soothing and delightful that he exclaimed, "Oh, my God, I thank Thee for this great relief!" In a short time he fell sound asleep in the bath, and continued in this position for many hours, the water being renewed from time to time to keep up the temperature. The cure proved to be immediate and permanent. Nothing is so conducive to health of body, and the eradication of disease therefrom, as the intelligent use of pure water. Sir Astley Cooper, being complimented on one occasion for his great skill, remarked, that he had "made mistakes enough to fill a graveyard," but it is scarcely possible to make a mistake with water, as no diseased person can fail to derive benefit from its use.

FIRE KINDLERS.—To make very nice fire kindlers, take resin, any quantity, and melt it, putting in for each pound being used, from two to three ounces of tallow, and when all is hot, stir in pine sawdust to make very thick; and, while yet hot, spread it out about one inch thick, upon boards which have fine sawdust sprinkled upon them, to prevent it from sticking. When cold, break up into lumps about one inch square. But if for sale, take a thin board and press upon it, while yet warm, to lay it off into inch squares; this makes it break regularly, if you press the crease sufficiently deep, greasing the marked board to prevent it from sticking.

PARALYTIC LINIMENT.—Sulphuric ether, six ounces; alcohol, two ounces; laudanum, one ounce; oil of lavender, one ounce; mix and cork tightly. In a recent case of paralysis let the whole extent of the numb surface be thoroughly bathed with this preparation, for several minutes, using the hand, at least three times daily; at the same time take internally, twenty drops of the same, in a little sweetened water.

CHARCOAL A CURE FOR SICK HEADACHE.—It is stated that two teaspoons of finely powdered charcoal, drank in one-half a tumbler of water will, in less than fifteen minutes, give relief to the sick headache, when caused, as in most cases it is, by superabundance of acid on the stomach. We have frequently tried this remedy, and its efficacy in every instance has been signally satisfactory.

CATHARTIC SYRUP.—Best senna leaf, one ounce; butternut, the inner bark of the root, dried and bruised, two ounces; peppermint

leaf, one half ounce; fennel seed, one-half ounce; alcohol, one-half pint; water, one and one-half pints; sugar, two pounds; put all into the spirit and water, except the sugar, and let it stand two weeks, then strain, pressing out from the dregs, adding the sugar and simmering a few minutes only, to form the syrup. If it should cause griping in any case, increase the fennel seed and peppermint leaf. Dose, one tablespoonful, once a day or less often if the bowels become too loose, up to the next period when the headache might have been expected, and it will not be forthcoming.

CHILBLAINS.—TO CURE.—Mutton tallow and lard, of each, one-quarter pound; melt in an iron vessel, and add hydrated oxyde of iron, two ounces, stirring continually with an iron spoon, until the mass is of a uniform black color; then let it cool, and add Venice turpentine, two ounces; Armenian bole, one ounce; oil of bergamot, one drachm; rub up the bole with a little olive oil before putting it in.

FELONS—IF RECENT, TO CURE IN SIX HOURS.—Venice turpentine, one ounce; and put into it a half teaspoonful of water, and stir with a rough stick until the mass looks like candied honey; then spread a good coat on a cloth, and wrap around the finger. If the case is only recent, it will remove the pain in six hours.

FELON SALVE.—A salve made by burning one tablespoonful of copperas, then pulverizing it and mixing it with the yolk of an egg, is said to relieve the pain, and cure the felon in twenty-four hours; then heal with cream two parts, and soft soap one part. Apply the healing salve daily after soaking the part in warm water.

FELON OINTMENT.—Take sweet oil, one-half pint, and stew a three-cent plug of tobacco in it until the tobacco is crisped, then squeeze it out, and add red lead, one ounce, and boil until black; when a little cold, add pulverized camphor gum, one ounce.

WARTS AND CORNS.—TO CURE IN TEN MINUTES.—Take a small piece of potash, and let it stand in the open air until it slakes, then thicken it to a paste with pulverized gum arabic, which prevents it from spreading where it is not wanted.

INFLAMMATORY RHEUMATISM.—Sulphur and saltpetre, of each, one ounce; gum guaiac, one-quarter ounce; colchicum root, or seed, and nutmegs, of each, one-half ounce; all to be pulverized and mixed with simple syrup, or molasses, two ounces. Dose, one teaspoonful every two hours until it moves the bowels rather freely; then three or four times daily until cured.

PATENT SELF-RAISING FLOUR.—Kiln-dried flour, one hundred-weight; tartaric acid, ten and one-half ounces; mix thoroughly. After two or three days, add, of bicarb. soda, twelve ounces; lump sugar, one-half pound; common salt, one and a half pounds. Mix and pass through the "dressing machine." Have all the articles perfectly dry, and separately reduce to fine powder before adding to the flour. Mix with cold water, and bake at once. It produces light and porous bread.

PREMIUM METHOD OF KEEPING HAMS, ETC.—To four gallons water, add eight pounds coarse salt; one quarter ounce potash; two ounces saltpetre, two pounds brown sugar. Boil together, skim when cold, put on the above quantity to 100 pounds meat; hams to remain in eight weeks, beef, three weeks. Let the hams dry several days before smoking. Meat of all kinds, salmon and other fish, lobsters, etc., may be preserved for years by a light application of pyroligneous acid applied with a brush, sealing up in cans as usual. It imparts a splendid flavor to the meat, is very cheap, and an effectual preservative against loss.

SYRUP FOR CONSUMPTIVES.—Of tamarac bark, take from the tree, without roasting, one peck; spikenard root, one half pound; dandelion root, one-quarter pound; hops, two ounces. Boil these sufficient to get the strength in two or three gallons water; strain, and boil down to one gallon; when blood warm, add three pounds best honey, and three pints best brandy; bottle and keep in a cool place. Dose, drink freely of it three times per day before meals, at least a gill or more; cure very certain.

PULMONIC WAFERS.—Lump sugar, licorice, and starch, of each, two parts; gum, ten parts; squills and ipecacuanha, of each, five parts; lactucarium, two parts. Mix and divide into eight grain lozenges.

SIR JAMES CLARKE'S DIARRHŒA AND CHOLERA MIXTURE.—Tincture of opium, tincture of camphor and spirits of turpentine, of each, three drachms; oil of peppermint, thirty drops; mix. Dose, one teaspoonful for cholera.

SYRUPS FOR SODA FOUNTAINS, ETC.—1. *Simple syrup.* White sugar, ten pounds; water, one gallon; best isinglass, one-quarter ounce. Dissolve the isinglass in hot water, and add to it the hot syrup. The syrup is to be made with gentle heat and then strained. 2. *Lemon—a*—Grate off the yellow rind of lemons and beat it up with a sufficient quantity of granulated sugar. Express the lemon juice, add to each pint of juice one pint of water, and three pounds of granulated sugar, including that rubbed with the rind; warm until the sugar is dissolved and strain. 3. *Lemon—b*—Simple syrup, one gallon; oil of lemon, twenty-five drops; citric acid, ten drachms. Rub the oil of lemon with the acid, add a small portion of syrup, and mix. 4. *Strawberry—a*—Strawberry juice, one pint; simple syrup, three pints; solution of citric acid, two drachms. 5. *Strawberry—b*—Fresh strawberries, five quarts; white sugar, twelve pounds; water, one pint. Sprinkle some of the sugar over the fruit in layers, and allow the whole to stand for several hours; express the juice and strain, washing out the pulp with water; add the remainder of the sugar and water, bring the fluid to the point of boiling, and then strain. This will keep for a long time. 6. *Raspberry.*—Raspberry juice, one pint; simple syrup, three pints; citric acid, two drachms. Raspberry syrup may also be made in a way similar to No. 5 for strawberry. 7. *Vanilla.*—Fluid extract of vanilla, one ounce; citric acid, three quarters ounce; simple syrup, one gallon. Rub the acid with some of the syrup, add the extract of vanilla, and mix. 8. *Van-*

illu Cream.—Fluid extract of vanilla, one ounce; simple syrup, three pints; cream or condensed milk, one pint; may be colored with carmine. 9. *Cream*.—Fresh cream, one pint; fresh milk, one pint; powdered sugar, one pound; mix by shaking, and keep in a cool place. The addition of a few grains of bicarbonate of soda will for some time retard souring. 10. *Ginger*.—Tincture of ginger, two fluid ounces; simple syrup, four pints. 11. *Orange*.—Oil of orange, thirty drops; tartaric acid, 4 drachms; simple syrup, one gallon. Rub the oil with the acid and mix. 12. *Pineapple*.—Oil of pineapple, one drachm; tartaric acid, one drachm; simple syrup, six pints. 13. *Orangeat*.—Cream syrup, one pint; vanilla syrup, one pint; oil of bitter almonds, four drops. 14. *Nectar*.—Vanilla syrup, five pints; pineapple syrup, one pint; strawberry, raspberry or lemon, two pints. 15. *Sherbet*.—Vanilla syrup, three pints; pineapple, one pint; lemon syrup, one pint. 16. *Grape*.—Brandy, three-quarters of a pint; spirits of lemon, three-quarters ounce; tincture of red sanders, two ounces; simple syrup, one gallon. 17. *Banana*.—Oil of banana, two drachms; tartaric acid, one drachm; simple syrup, six pints. 18. *Coffee*.—Coffee roasted, three-quarters pound; boiling water, one gallon. Enough is filtered to make about one-half gallon of the infusion, to which add granulated sugar, seven pounds. 19. *Wild Cherry*.—Wild cherry bark, coarse powder, five ounces. Moisten the bark with water, and let it stand for twenty-four hours in a close vessel. Then pack it firmly in a percolator, and pour water upon it until one pint of fluid is obtained. To this add twenty-eight ounces of sugar. 20. *Wintergreen*.—Oil of wintergreen, twenty-five drops; simple syrup, five pints, and a sufficient quantity of burnt sugar to color. 21. *Sarsaparilla*.—*a*—Oil of wintergreen, ten drops; oil of anise, ten drops; oil of sassafras, ten drops; fluid extract of sarsaparilla, two ounces; simple syrup, five pints; powdered extract of licorice, one ounce. 22. *Sarsaparilla*.—*b*—Simple syrup, four pints; compound syrup of sarsaparilla, four fluid ounces; caramel, one and one-half ounces; oil of wintergreen, six drops; oil of sassafras, six drops. 23. *Maple*.—Maple sugar, four pounds; water, two pints. 24. *Chocolate*.—Best chocolate, eight ounces; water, two pints; white sugar, four pounds. Mix the chocolate in water and stir thoroughly over a slow fire. Strain, and add the sugar. 25. *Coffee Cream*.—Coffee syrup, two pints; cream, one pint. 26. *Ambrosia*.—Raspberry syrup, two pints; vanilla, two pints; hock wine, four ounces. 27. *Hock and Claret*.—Hock or claret wine, one pint; simple syrup, two pints. 28. *Solferino*.—Brandy, one pint; simple syrup, two pints. 29. *Fruit Acid* (used in some of the syrups).—Citric acid, four ounces; water, eight ounces. Most of the syrups not made from fruits may have a little gum-arabic added in order to produce a rich froth.

FRENCH SIZE FOR GILDING ORNAMENTS, CEILINGS, ETC.—Mix thick glue to the proper consistence, with a little pure honey, this imparts a beautiful color to the gold, and gives a splendid effect to the work. Previous to using the distemper colors, give the walls and ceilings, if new and clean, a good coat of paint, which should be mixed about two thirds turpentine and one-third linseed oil, using as much Japan dryer as will dry it hard; be careful of adding too much oil, as it will spoil the subsequent work.

In preparing vestibules, halls, etc., to stand washing, go over the walls with oil paint for the first coat, but for the last coat no oil should be used, only spirits of turpentine. A harder surface will be given to the wall by adding one tablespoonful of good pale copal varnish to each twenty-five pounds of paint used for the last coat. Previous to the wall receiving the last two coats, let the design or panelling be all correctly laid out.

TO PROTECT WOOD AND BRICKWORK FROM DAMP WEATHER.—Take three pecks of lime, slaked in the air, two pecks of wood-ashes, and one peck of white sand. Sift them fine, and add linseed oil sufficient to use with a paint brush; thin the first coat; use it as thick as it will work for the second coat, grind it fine, or beat it in a trough, and it is a good composition.

PUTTY FOR REPAIRING BROKEN WALLS.—The best putty for walls is composed of equal parts of whiting and plaster of Paris, as it quickly hardens. The walls may be immediately colored upon it.

COMPOUND COLORS—FIFTY-FIVE TINTS.—*Blue.*—Grind Prussian blue in turpentine, other blue, very fine in linseed oil; mix with white paint to the color required. *Straw.*—A mixture of chrome yellow, and white lead, oil and turpentine. *Steel.*—Mix ceruse, Prussian blue fine lac, and vermilion, with oil and turpentine. *Purple.*—White lead, Prussian blue and vermilion, with oil and turpentine. *French Gray.*—White lead and Prussian blue tinged with vermilion, and for the last coat substitute carmine or lake for vermilion. *Drab.*—White lead with a little Prussian blue and French yellow, linseed oil and turpentine. *Another Drab.*—White lead with a little Prussian blue and lamp-black, linseed oil and turpentine. *Dark Red, for common purposes.*—Mix English Venetian red, in boiled oil, a little red lead and litharge, to give a drying quality. *Lighter Red.*—Mix together equal parts of Venetian red and red lead in boiled oil and turpentine. *Imitation of Vermilion.*—Grind together, in oil, red lead and rose pink. *Deep Red.*—Mix in oil, vermilion with a dust of Venetian red or red lead. *Unfading Orange.*—This is a mixture of orange lead (orpiment) and French or stone yellow, oil and turpentine. *Bright Yellow, for floors.*—White lead and linseed oil, mixed with some French yellow, and a little chrome yellow to heighten it, some red lead, burnt white vitriol and litharge, added to give it a drying quality. This color mixed with equal parts of boiled oil and turpentine, and used very thin. *Dark Yellow.*—Mix French yellow in boiled oil, adding to it a little red lead or litharge to give the paint a drying quality. *Light Yellow.*—This is a mixture of French yellow and white lead, with oil and turpentine. *Another.*—French yellow, white lead and red lead. *Another.*—This is a mixture of Prussian blue, French yellow, a small portion of Turkey umber, and a little burnt vitriol. Grind the same way. *Another, in oil.*—Mix Prussian blue and chrome yellow. Grind the same. *Another Shade.*—A mixture of Prussian blue and French yellow, with a small quantity of white lead and Turkey umber; add burnt vitriol. Grind the same. *Another, light.*—White mixed with verdigris. A variety of shades may be obtained by using blue and yellow with white lead. *Another, Olive.*—Black and blue mixed with yellow, in such quantities as to obtain the colors or shades re-

quired. For *distemper*, use indigo and yellow pink mixed with whitening or white lead powder. *Freestons color*.—A mixture of red lead, Venetian red, French yellow and lampblack (varying the shade according to taste), with linseed oil and turpentine. *Olive Green*.—Grind separately, Prussian blue and French yellow, in boiled oil, then mix to the tints required with a little burnt white vitriol to act as a dryer. A cheap and handsome color for outside work, such as doors, carts, wagons, railings, etc. *Light Gray* is made by mixing white lead with lampblack, using more or less of each material as you wish to obtain a lighter or a darker shade. *Buff* is made from yellow ochre and white lead. *Silver or Pearl Gray*.—Mix white lead, Prussian blue, and a very slight portion of black, regulating the quantities you wish to obtain. *Flazen Gray* is obtained by a mixture of white lead and Prussian blue, with a small quantity of lake. *Brick Color*.—Yellow ochre and red lead, with a little white. *Oak Wood Color*.—Three-quarters white lead and one quarter part umber and yellow ochre, proportions of the last two ingredients being determined by the desired tints. *Walnut-tree Color*.—Two-thirds white lead, and one-third red ochre, yellow ochre, and umber, mixed according to the shade sought. If veining is required, use different shades of the same mixture, and for the deepest places, black. *Jongquil*.—Yellow, pink, and white lead. This color is only proper for distemper. *Lemon Yellow*.—Realgar and orpiment. The same color can be obtained by mixing yellow pink with Naples yellow; but it is then only fit for distemper. *Orange Color*.—Red lead and yellow ochre. *Violet Color*.—Vermilion or red lead, mixed with black or blue, and a small portion of white. Vermilion is preferable to red lead in mixing this color. *Purple*.—Dark red mixed with violet color. *Carnation*.—Lake and white. *Gold Color*.—Massicot, or Naples yellow, with a small quantity of realgar, and a very little Spanish white. *Olive Color* may be obtained by black and a little blue, mixed with yellow. Yellow-pink, with a little verdigris and lampblack; also ochre and a small quantity of white will produce an olive color. For *distemper*, indigo and yellow-pink, mixed with white lead or Spanish white, must be used. If veined, it must be done with umber. *Lead Color*.—Prussian blue and white. *Chestnut Color*.—Red ochre and black, for a dark chestnut. To make it lighter, employ a mixture of yellow ochre. *Light Timber Color*.—Spruce ochre, white, and a little umber. *Flesh Color*.—Lake, white lead, and a little vermilion. *Light Willow Green*.—White, mixed with verdigris. *Grass Green*.—Yellow-pink mixed with verdigris. *Stone Color*.—White, with a little spruce ochre. *Dark Lead Color*.—Black and white, with a little Prussian blue. *Flawn Color*.—White lead, stone ochre, with a little vermilion. *Chocolate Color*.—Lampblack and Spanish brown. *Cream Color*.—White lead, yellow and red. *Portland Stone Color*.—Umbre, yellow ochre, and white lead. *Peach Blossom Color*.—White lead and vermilion. *Snuff Color*.—Yellow, sienna and red. *Rose Color*.—White lead and carmine.

SOLDERS THIRTY-TWO KINDS.—*Plumbers' solder*.—Lead, two parts; tin, one part. 2. *Tinmen's solder*.—Lead, one part; tin, one part. *Zinc solder*.—Tin, one part; lead, one to two parts. 4. *Pewter solder*.—Lead, one part; bismuth, one to two parts. 5. *Spel-*

ter solder.—Equal parts copper and zinc. 6. *Pewterers' soft solder.*—Bismuth, two parts; lead, four parts; tin, three parts. 7. *Another.*—Bismuth, one part; lead, one part; tin, two parts. 8. *Another pewter solder.*—Tin, two parts; lead, one part. 9. *Glazier's solder.*—Tin, three parts; lead, one part. 10. *Solder for copper.*—Copper, ten parts; zinc, nine parts. 11. *Yellow solder for brass or copper.*—Copper, thirty-two pounds; zinc, twenty-nine pounds; tin, one pound. 12. *Brass solder.*—Copper, 61.25 parts; zinc, 38.75 parts. 13. *Brass solder, yellow and easily fusible.*—Copper, forty-five parts; zinc, fifty-five parts. 14. *Brass solder, white.*—Copper, 57.41 parts; tin, 14.60 parts; zinc, 27.99 parts. 15. *Another solder for copper.*—Tin, two parts; lead, one part. When the copper is thick, heat it by a naked fire; if thin, use a tinned copper tool. Use muriate or chloride of zinc, as a flux. The same solder will do for iron, cast iron, or steel; if the pieces are thick, heat by a naked fire, or immerse in the solder. 16. *Black solder.*—Copper, two parts; zinc, three parts; tin, two parts. 17. *Another.*—Sheet brass, twenty pounds; tin, six pounds; zinc, one pound. 18. *Cold brazing without fire or lamp.*—Fluoric acid, one ounce; oxy muriatic acid, one ounce; mix in a lead bottle. Put a chalk mark each side where you want to braze. This mixture will keep about six months in one bottle. 19. *Cold soldering without fire or lamp.*—Bismuth, one-quarter ounce; quicksilver, one-quarter ounce; block tin filings, one ounce; spirits salts, one ounce; all mixed together. 20. *To solder iron to steel or either to brass.*—Tin, three parts; copper, thirty-nine and one-half parts; zinc, seven and one-half parts. When applied in a molten state it will firmly unite metals first named to each other. 21. *Plumbers' solder.*—Bismuth, one part; lead, five parts; tin, three parts; is a first-class composition. 22. *White solder for raised Britannia ware.*—Tin, one hundred pounds; hardening, eight pounds; antimony, eight pounds. 23. *Hardening for Britannia* (to be mixed separately from the other ingredients).—Copper, two pounds; tin, one pound. 24. *Best soft solder for cast Britannia ware.*—Tin, eight pounds; lead, five pounds. 25. *Bismuth solder.*—Tin, one part; lead, three parts; bismuth, 3 parts. 26. *Solder for brass that will stand hammering.*—Brass, 78.26 parts; zinc, 17.41 parts; silver, 4.83 parts; add a little chloride of potassium to your borax for a flux. 27. *Solder for steel joints.*—Silver, nineteen parts; copper, one part; brass, two parts. Melt all together. 28. *Hard solder.*—Copper, two parts; zinc, one part. Melt together. 29. *Solder for brass.*—Copper, three parts; zinc, one part; with borax. 30. *Solder for copper.*—Brass, six parts; zinc, one part; tin, one part; melt all together well, and pour out to cool. 31. *Solder for platina.*—Gold with borax. 32. *Solder for iron.*—The best solder for iron is good tough brass with a little borax.

N. B. In soldering, the surfaces to be joined are made perfectly clean and smooth, and then covered with sal ammoniac, resin or other flux, the solder is then applied, being melted on and smoothed over by a tinned soldering iron.

SOLDERING FLUID.—Take two ounces muriatic acid; add zinc till bubbles cease to rise; add one half teaspoonful of sal ammoniac.

PAINT FOR BLACK BOARDS IN SCHOOLS.—Common glue, four ounces; flour of emery, three ounces; and just lampblack enough to give an inky color to the preparation. Dissolve the glue in three-quarters of a quart of warm water, put in the lampblack and emery, stir till there are no lumps, then apply to the board with a woollen rag smoothly rolled. Three coats are amply sufficient.

COMPOUND IRON PAINT.—Finely pulverized iron filings, one part; brick dust, one part; and ashes, one part. Pour over them glue-water or size, set the whole near the fire, and, when warm, stir them well together. With this paint cover all the wood work which may be in danger; when dry, give a second coat, and the wood will be rendered incombustible.

FILLING COMPOSITIONS—TWELVE KINDS.—1. Work finished in oil should receive a substantial filling consisting of equal parts by weight of whiting, plaster of Paris, pumice-stone, and litharge, to which may be added a little French yellow, asphaltum, Vandyke brown, and *terra di sienna*. Mix with one part japan, two parts of boiled oil, and four parts of turpentine. Grind fine in a mill. Lay the filling on with a brush, rub it in well, let it set twenty minutes, then rub off clean. Let it harden for some time, rub smooth, and if required, repeat the process. When the filling is all right, finish with linseed oil, applying with a brush, wipe off, and rub to a polish with fine cotton, and finish with any fine fabric. Some will with rye flour, wheat flour, corn starch, Paris white, etc., ground fine in oil and turpentine, but when work is to be varnished, such filling should previously receive one or two good coats of shellac.

2. Boiled linseed oil, one quart; turpentine, three quarts; corn starch, five pounds; japan, one quart; calcined magnesia, two ounces. Mix thoroughly.

3. Whiting, six ounces; Japan, one-half pint; boiled linseed oil, three-quarters pint; turpentine, one-half pint; corn starch, one ounce; mix well together and apply to the wood. On walnut wood add a little burnt umber; on cherry a little Venetian red, to the above mixture.

4. On furniture apply a coat of boiled linseed oil, then immediately sprinkle dry whiting upon it, and rub it in well with your hand or a stiff brush, all over the surface, the whiting absorbs the oil, and fills the pores of the wood completely. For black walnut, add a little burned umber to the whiting; for cherry, a little Venetian red, etc., according to the color of the wood. Turned work can have it applied while in motion in the lathe. Furniture can afterwards be finished with only one coat of varnish.

5. Terra alba is a very good and very cheap filling. Many painters have been most shamefully imposed on by parties selling the stuff at a high price.

6. *Furniture pastes.*—Beeswax, spirits of turpentine and linseed oil, equal parts; melt and cool.

7. Beeswax, four ounces; turpentine, ten ounces; alkanet root to color; melt and strain.

8. Beeswax, one pound; linseed oil, five ounces; alkanet root, one-half ounce; melt and add five ounces turpentine, strain and cool.

9. Beeswax, four ounces; rosin, one ounce; oil of turpentine, two ounces; digest until sufficiently colored, then add beeswax till dissolved, then add beeswax scraped small, four ounces; put the vessel into hot water, and stir

till dissolved. If wanted *pale* the alkanet root should be omitted. 10. (White.) White wax, one pound; liquor of potassa, one-half gallon; boil to a proper consistency. 11. Beeswax, one pound; soap, one-quarter pound; pearl-ash, three ounces, dissolved in water, one-half gallon; strain and boil as the last. 12. Yellow wax, eighteen parts; rosin, one part; alkanet root, one part; turpentine, six parts; linseed oil, six parts. First steep the alkanet in oil with heat, and when well colored pour off the clear on the other ingredients, and again heat till all are dissolved.

TO PREVENT LEAD EXPLODING.—Many mechanics have had their patience sorely tried when pouring melted lead around a damp or wet joint to find it explode, blow out, or scatter from the effects of steam generated by the heat of the lead. The whole trouble may be stopped by putting a piece of resin the size of the end of a man's thumb into the ladle and allowing it to melt before pouring. Simple as the secret is, many have paid twenty dollars for the privilege of knowing it.

PAINTING IN MILK.—Skimmed milk, one-half gallon; newly slaked lime, six ounces; and four ounces of poppy, linseed, or nut oil; and three pounds Spanish white. Put the lime into an earthen vessel or clean bucket, and having poured on it a sufficient quantity of milk to make it about the thickness of cream, add the oil in small quantities a little at a time, stirring the mixture well. Then put in the rest of the milk, afterwards the Spanish white finely powdered, or any other desired color. For out-door work add two ounces each more of oil and slaked lime, and two ounces of Burgundy pitch dissolved in the oil by a gentle heat.

PREMIUM PAINT WITHOUT OIL OR LEAD.—Slack stone-lime with boiling water in a tub or barrel to keep in the steam: then pass six quarts through a fine sieve. Now to this quantity add one quart of coarse salt, and a gallon of water; boil the mixture and skim it clear. To every five gallons of this skimmed mixture, add one pound alum, one-half pound copperas, and by slow degrees three quarters pound potash, and four quarts sifted ashes or fine sand; add any coloring desired. A more durable paint was never made.

COMPOSITION TO KEEP MILLSTONES CLEAN.—Hot water, one gallon; borax, two ounces; washing soda, one-quarter pound, and three balls of the size of a hazel nut each, of sal prunel. Mix and apply it to the burrs with a scrubbing brush. When grinding garlic wheat it is not necessary to take up the burrs at all. It is sufficient to drop through the eye of the burr twice per day one of the above described balls of sal prunel, and that will keep the burrs sharp and clean, enabling the miller at all seasons to use the No. 13 bolt, to make finer flour and in greater quantity than usual.

EXCELLENT CHEAP ROOFING.—Have your roof stiff, rafters made of stuff one and one-half by eight inches, well supported and six feet apart, with ribs one inch by two inches, set edgeways, will nailed to the rafters, about eighteen inches apart. The boards may be thin but must be well seasoned, and nailed close together; this done, lay down and cover the roof with this soft, spongy straw paper used in

making paper-boxes, which comes in rolls and comes very low. Lay in courses up and down the roof, and lap over, nailing down with common No. 6 tacks, with leather under the heads like carpet tacks. Then spread on several coatings of the following composition, previously boiled, stirred, and mixed together: good clean tar, eight gallons; Roman cement, two gallons (or in its place very fine, clean sand may be used); resin, five pounds; tallow, three pounds; apply hot; and let a hand follow, and sift on sharp grit sand, pressing it into the tar composition. If wished fire-proof, go over the above with the following preparation: slake stone-lime under cover with hot water till it falls into a fine powder, sift and mix six quarts of this with one quart salt; add two gallons water, boil and skim. To five gallons of this add one pound of alum, and one and one-half pounds of copperas, slowly while boiling, one and one-half pounds potash, and four quarts of clean, sharp sand, and any color desired. Apply a thick coat with a brush, and you have a roof which no fire can injure from the outside.

HOW TO BUILD GRAVEL HOUSES.—This is the best building material in the world. It is four times cheaper than wood, six times cheaper than stone, and superior to either. Proportions for mixing: to eight barrows of slaked lime, well deluged with water, and fifteen barrows of sand; mix these to a creamy consistency, then add sixty barrows of coarse gravel, which must be worked well and completely; you can then throw stones into this mixture, of any shape or size, up to ten inches in diameter. Form moulds for the walls of the house by fixing boards horizontally against upright standards which must be immovably braced so that they will not yield to the immense pressure outward as the material settles; set the standards in pairs around the building where the walls are to stand, from six to eight feet apart, and so wide that the inner space shall form the thickness of the wall. Into the moulds thus formed throw in the concrete material as fast as you choose, and the more promiscuously the better. In a short time the gravel will get as hard as the solid rock.

BURGLAR ALARM.—During the present time, when tramps, sneak-thieves, audacious burglars and desperadoes are prowling around and infesting society, it may not be amiss to quote the following description of a homemade burglar alarm by a correspondent of the *English Mechanic*:—"Just inside my shop door, and directly opposite to it, I have cut a trap in the floor, three feet by two feet, and made it to work upon hinges, at the back or door side (same as a box-lid). I have placed under the front edge of the trap two common spiral bed springs, blocked up from the ground sufficiently to throw front edge of trap, which rests upon them, about one inch above the level of the flooring. The springs of course, are placed about six inches from each front corner, along front edge, so as to equalize the strain as much as possible. The following is easy. In the place where 'New Subscriber' would fix his electric bell, let him fix or have fixed an ordinary bell or gong, with the wire carried from it, in the way best suited to the house, under flooring of passage to the trap, beneath the front or raised edge of which there must be a crank that the springing of the trap shall work and ring the bell, which, if well hung at a good

ringing pitch, will awaken the soundest sleeper in the event of a thief or any intruder entering the house at improper times, or for improper purposes. To avoid annoyance in the daytime, a button at each end of trap would fix it down firmly, and at night, upon going to bed or when locking up, it could be released. The door-mat would cover the entire thing, and no one but those concerned need ever know of its existence. I do not hesitate to say that not one in fifty people, or even a hundred, that enter my shop know of anything or notice anything different to any other place they may go into, yet it has been in use for seven years. I fitted it myself, though not a bell-hanger, and it never once got out of condition, but the bell will often give fifteen and twenty beats with one person treading on the mat."

ROMAN CEMENT.—Drift sand, ninety-four parts; unslaked lime, twelve pounds; and four pounds of the poorest cheese grated; mix well; add hot (not boiling) water to reduce to a proper consistence for plastering. Work well and quick with a thin smooth coat.

TO POLISH PLASTER OF PARIS WORK.—The addition of one or two per cent. of many salts, such as alum, sulphate of potash, or borax confers upon gypsum the property of setting slowly in a mass capable of receiving a very high polish.

TO MAKE PLASTER OF PARIS AS HARD AS MARBLE.—The plaster is put in a drum, turning horizontally on its axis, and steam admitted from a steam boiler: by this means the plaster is made to absorb in a short space of time the desired quantity of moisture, which can be regulated with great precision. The plaster thus prepared is filled into suitable moulds; and the whole submitted to the action of an hydraulic press: when taken out of the moulds, the articles are ready for use and will be found as hard as marble, and will take a polish like it.

MARINE PAINT FOR METALS IN SALT WATER.—Red lead, fifty-five parts; quicksilver, thirty parts; thick turpentine, seven parts. Mix with boiled linseed oil to the proper consistency. The quicksilver must be thoroughly amalgamated with the thick turpentine by grinding or rubbing, and this mixture must be ground with red lead and more boiled oil. As little oil as is necessary to make the paint lay well must be used. To make the paint adhere more firmly, a previous coat of oxide of iron paint may be used.

TO PRESERVE EGGS.—1. For each patent pailful of water put in one pint of fresh slaked lime, and one pint of common salt, mix well; fill your barrel about half full of this fluid, then with a dish, let your fresh eggs down into this, and they will settle down right side up with care every time, and we can assure any one who will try it, that they will keep any reasonable length of time without any further care than to keep them covered with the fluid. Eggs may be laid down in this way any time after June.—2. Eggs may be preserved by keeping them buried in salt, or dipping them during two or three seconds in boiling water. The white of the egg then forms a kind of membrane, which envelops the interior, and defends it from the air.—3. The week before going to sea, on a four months' voyage, I gathered

in sixty dozen eggs for cabin sea stores, taking especial pains to prove every egg of the lot a good one; besides, I got them from my farmer friends, and knew they were all fresh. Then I fixed them for keeping, by taking five or six dozen at a time in a basket, and dipping them about five seconds in the cook's "copper" of boiling water. After scalding I passed the eggs through a bath, made by dissolving about five pounds of the cheapest brown sugar in a gallon of water, and laid them out on the galley floor to dry. Then I had my sixty dozen eggs sugar-coated. I packed them in charcoal dust instead of salt; I tried salt ten years, and I don't believe it preserves eggs a mite. The steward had strict orders to report every bad egg he should find. During the voyage he brought three, not absolutely spoiled, but a little old like. All the others, or what was left of them, were as fresh when we came in as they were when I packed them away.—4. A Parisian paper recommends the following method for the preservation of eggs: Dissolve four ounces of beeswax in eight ounces of warm olive oil, in this put the tip of the finger and anoint the egg all round. The oil will immediately be absorbed, and the shells and pores filled up by the wax. If kept in a cool place the eggs, after two years, will be as good as if fresh laid.—5. Take of quicklime one pound; salt, one pound; saltpetre, three ounces; water one gallon. It is necessary that the solution be boiled ten or fifteen minutes, and when cold put in the eggs, small end downward, using a vessel lined with lead, and placing in a cold but dry cellar.—6. Dip them into a solution of gun-cotton, (collodion), so as to exclude the air from the pores of the shell; or the collodion may be applied with a brush.—7. A writer recommends the dissolving of gum shellac in alcohol, when the mixture may be applied with a common paint-brush. When dry, pack in bran, points downward. Eggs so preserved will keep a very long time. When about to be used, the varnish may be washed off.—8. Get a good sweet wooden box, put about an inch of salt on the bottom; take sweet grease of any kind, lard or drippings, rub the eggs all over with it and put them, the little end down, in the salt; then spread a layer of salt and then add more eggs.—9. Pack the eggs in a cask, with the smaller ends downward; and fill up the cask with melted tallow. This method is practiced very extensively in Russia and in other parts of Europe, and is generally successful.—10. Keep them at the temperature of 40 or less in a refrigerator. Specimens had been exhibited, which were fourteen months old and still perfectly fresh and sweet.—11. Apply with a brush a solution of gum arabic to the shells, or immerse the eggs therein; let them dry, and afterwards pack them in dry charcoal dust. This prevents their being affected by any alterations of temperature.—12. Of all the materials that have been recommended for this purpose, water glass, or silicate of soda, is the most effectual and least objectionable.

TO PREVENT HENS SETTING.—Setting hens can be cured by putting water in a vessel to the depth of one inch, putting the hen into it, and covering the top of the vessel for about twenty-four hours. The vessel should be deep enough to allow the fowl to stand up.

TO MAKE HENS LAY.—A hen is said to have the capacity of laying 600 eggs and no more—a few in her first year, from 320 to 375 in the next three, and the rest from the fifth to the ninth inclusive. The true economy, therefore, is not to keep hens after their fourth year. By feeding stimulating food, the hen can be made to lay the quantum of eggs with which she is endowed in a much shorter time than if left to scratch for herself. There is no better food for this purpose, fed each alternate day, than the following: To three gallons of boiling water add one-quarter ounce of common salt, a teaspoonful of cayenne pepper, and four ounces lard. Stir the mixture until the pepper has imparted considerable of its strength to the water. Meantime the salt will have been dissolved and the lard melted. Then, while yet boiling hot, stir in a meal made of oats and corn, ground together in equal proportions, until a stiff mush is formed. Set away to cool down to a milk warmth. Before feeding, taste to see that you have an overdose neither of salt nor pepper, and to prevent the hens from being imposed upon with a mixture not fit to be eaten. Besides this, especially during the winter, give them on the days on which the above mixture is omitted, a half ounce of fresh meat chopped fine, and at all times plenty of pure water, grain, gravel, and lime.

LAYING SOFT-SHELLED EGGS.—This results from a deficient supply of lime, and an excess of soft and animal food. Give with the feed more plaster, pounded oyster shells, gravel, and rubbish, etc.

KILLING AND DRESSING POULTRY.—As much, if not more, depends on the manner of killing poultry as in the dressing to have it look fit for market. Too much caution cannot be used in this branch of the business. One mode of killing fowls, is to cut their heads off with a single blow of a sharp ax, hang them up by their legs and allow them to bleed freely, and pluck their feathers immediately—while yet warm. Another mode, which is highly commended, is simply done by opening the beak of the fowl, and with a sharp-pointed and narrow-bladed knife, make an incision at the back of the roof, which will divide the vertebrae, and cause immediate death, after which hang the fowl up by the legs till the bleeding ceases, and pick it while warm, if you desire the feathers to be removed. With a little care the skin of the fowl does not become as torn and ragged as it does in the old-fashioned way of scalding. Another thing, the flesh presents a better and more natural appearance when not scalded. Fowls should always be allowed to remain in their coops at least twenty-four hours previous to being killed, without food; by so doing the breeder will be a gainer in the end; as his poultry will keep longer, and present a better appearance in the market; and above all he will show the purchaser that he is honest, and has not crammed his poultry for the purpose of benefiting himself and swindling others.

BEST EGG-PRODUCING HENS.—Experience has indicated that for laying eggs the Polands are most desirable; for the table, Dorkings;

and for early marketable chickens, Brahmas and Cochins. A writer who has had considerable experience in raising fowls for profit, says: The Farmer's Breed is the breed for profit. It consists of Brahma hens and colored Dorking cocks—the chicks from which are hardy, easily reared, grow fast, and in four months, without extra feed, will dress four to five pounds each of fine-grained, well-formed, plump-breasted, well-colored flesh, fit for the table of any amateur or epicure, and always commanding a good price in market. The hens from this cross are even better and more continuous layers than either pure Brahma or the Dorking; but if wanted to breed again, the farmer must keep one coop separate of Brahmas—say a cock and two hens—and so also of the Dorkings, and thus yearly with the cross of pure bred birds, cocks of the Dorkings and hens of the Brahmas, keep up the "Farmer's breed for profit."

SEX OF EGGS.—It is affirmed with assurance that the eggs containing the germ of males have wrinkles on their smaller ends, while female eggs are smooth at their extremities.

TO PRESERVE CLOTHING AND FURS FROM MOTHS.—1. Procure shavings of cedar-wood, and inclose in muslin bags, which should be distributed freely among the clothes.—2. Procure shavings of camphor-wood, and inclose in bags.—3. Sprinkle pimento (allspice) berries among the clothes.—4. Sprinkle the clothes with the seeds of the musk plant.—5. An ounce of gum camphor and one of the powdered shell of red pepper are macerated in eight ounces of strong alcohol for several days, then strained. With this tincture the furs or clothes are sprinkled over, and rolled up in sheets.—6. Carefully shake and brush woollens early in the spring, so as to be certain that no eggs are in them; then sew them up in cotton or linen wrappers, putting a piece of camphor gum, tied up in a bit of muslin, into each bundle, or into the chests and closets where the articles are to lie. No moth will approach while the smell of the camphor continues. When the gum is evaporated, it must be renewed. Enclose them in a moth-proof box with camphor no matter whether made of white paper or white pine, before any eggs are laid on them by early spring moths.

TO KILL MOTHS IN CARPETS.—Wring a coarse crash towel out of clear water, spread it smoothly on the carpet, iron it dry with a good hot iron, repeating the operation on all parts of the carpet suspected of being infested with moths. No need to press hard, and neither the pile nor color of the carpet will be injured, and the moths will be destroyed by the heat and steam.

TO CURE BLIGHT IN FRUIT TREES.—A smothering straw fire should be made early in October, in calm weather, under each tree, and kept up during an hour or more. This done, scrape the moss and other impurities from the trunk, and from every obscure hole and corner; set your ladders to the branches, carefully cleaning them in the same way, taking from the remaining leaves every web or nidus of insects. If need be, wash the trunk, and all the larger wood, with a solution of lime and dung. Last of all, it is necessary to destroy the insects and eggs which may have dropped upon the ground, and it may be useful to loosen the soil in the circumference.

In the spring, or early blighting season, apply your ladders, make a careful survey of every branch, and act accordingly; repeat this monthly picking off of blights by hand, and using the water engine, where ablution may be necessary. To those who have fruit, or the market profit thereof, every orchard or garden, little or great, will amply repay such trouble and expense.

HOW TO TEST THE VITALITY OF SEED.—By placing almost any of the larger seeds and grains on a hot pan or griddle, where the vitality is perfect the grain will pop, or crack open with more or less noise. Where the vitality is defective or lost, it lies immovable in the vessel.

TAMING AND TRAINING HORSES.—Many persons pay for instructions in training horses, and yet they nearly all fail, simply because, with all the instruction in the world, they can not handle a horse—it is not in them. To be a successful trainer you must have sympathy with the horse and a personal power of control. That which partakes of the power necessary to subdue and train, you will find in your own mind, your own love, will and wisdom. If you have little or no instinctive love for the horse, of course you are not the person to control him. Men and women are often found who are said to have the natural gift of controlling the horse; they love horses from instinct, as it were. The secret in these cases consists in their intense love for the horse. If you love the horse, you will, you can, but know how to make the horse love you. Love, in all grades of animals, has its appropriate language; and when this language is addressed to the horse, it excites love, of course. A blow with a whip or club does not come from love, but from combativeness, and it excites combativeness or fear in the horse. If you want to make a horse love you (and you must cause him to love you if you control him), why of course you must love him and treat him accordingly. Study the character of you horse—not the nature of horses in general, but of the horse that you wish to control. Horses differ in their dispositions as really as men do, and each one is to be approached, attracted, pleased and controlled accordingly. *To make him lie down.*—First, catch your horse, then strap the near fore leg up round the arm of the animal; lead him about on three legs until he becomes tired or weary; he will then allow you to handle him anywhere; then attach a strap with a ring to the off fore-fetlock; to this ring fasten another strap, which being brought over the horse's back to the near side, is put through the ring on the off fore-fetlock; return the end of the strap to the near side, still keeping fast hold, and move the animal on, and pull; he will then be thrown upon his knees, when, after struggling for some time, by gentle usage he will lie down. After unloosing the straps, put him through the same process as before, when the horse will lie down whenever required. Uniformity is necessary in our method. It is by the repetition, by the constant recurrence of certain motions, words or actions, that we succeed. Many fail for the want of uniformity in their method. They are loving and kind by spells; then they are harsh and cruel. The horse is "impressed," as it is said, with his master's wishes, when these wishes are often and

uniformly expressed in motions, words and actions! If man needs "precept upon precept, line upon line," etc., in order to learn his lessons well, how much more true is this of the horse, which is below man in consciousness and the reflective faculties. *Teaching him to pace.* Buckle a four pound weight around the ankles of his hind legs (lead is preferable), ride your horse briskly with these weights upon his ankles at the same time, twitching each rein of the bridle alternately; by this means you will immediately throw him into a pace. After you have trained him in this way to some extent, change your leaded weight for something lighter; leather padded, or something equal to it, will answer the purpose; let him wear these light weights until he is perfectly trained. This process will make a smooth and easy pacer of any horse. *To make him trot.*—The secret consists in using rollers on the front feet. These rollers are made of pieces of wood or horn turned round, as big as a hickory nut, with a gimblet hole bored through the centre of each, and about twelve of them strung on a string or narrow strap (which should be much smaller than the hole), and then tied or buckled very loose around the joint next to the hoof, so that they will play loose up and down when the horse is in motion. As soon as the horse finds something on his feet, he will lift them up higher and throw them out further and handsomer; this he will soon learn permanently. Another secret is that a small or medium seized flat is the best and far superior to the track system for teaching the horse or colt to gather quickly. A very light skeleton or gig should be used in training. *To sit on his haunches.*—First learn the horse to obey you, so that when you say "Ho!" he will remain still. Then, having learned him to lie down, let him get up on his fore legs, and then stop him. The horse gets up in this way, and you have only to teach him to hold his position for a while. It does not strain the horse to sit, and you must always use the word "sit" in connection with the feat, also the word "down" when you wish him to fall. *To make him follow you.*—Take your horse to the stable, put on a surcingle and a bridle with short reins, which may be checked up a little and fastened to the surcingle. Then lead him about a few times, and letting go the bridle continue to caress him, as you say, "Come along." If he lag, give him a light cut behind with a long whip. Continue this until you succeed. Do not forget the element of "love" in this as well as other feats. *To teach him to pick up a handkerchief.*—Spread on the sawdust a white cloth containing a liberal supply of oats; lead the animal round the ring, and let him take some of the oats. This is lesson No. 1—its object being to fix in the horse's mind and connection between the cloth and the oats. The march round the circle being once or twice repeated, he stops at the handkerchief as a matter of course. By dint of practice—say a couple of weeks—he will learn to stop as readily in a trot or a gallop as in a walk. After a time the handkerchief must be doubled over and tied in a knot; the animal shakes it to get at the grain, but not succeeding, lifts it from the ground, which is just the thing wanted. When the horse has done this a few times, and finds that, though he can shake nothing out, he will receive a handful of oats as a reward, he may be trusted to

perform in public. The last step of all—persuading the horse to carry the handkerchief to his owner—is easily done. Of his own accord he will hold the cloth till it is taken from his mouth, and there will be little difficulty in coaxing him to walk a few steps—when he knows that he will get a handful of oats or a carrot for his obedience. *Teaching him to walk.*—For every-day use, the most economical gait for a horse is a fast walk; and yet not half the thought is given to this essential that there is to other things that secure to the horse a name rather than intrinsic value. Colts can be taught to walk fast by following them for a half day together (some one leading) with a small switch, starting them, when inclined to go slow, into a quicker pace. After they are harnessed keep fast walking in mind, and when on level ground, or going up a hill with a very light load, urge them to their utmost, until four miles an hour becomes a habit. *Teaching him to stand.*—Take your horse on the barn floor, and throw a strap over his back and fasten it to his right fore foot; lead him along and say “Whoa,” and at the same time pull down the strap, which will throw him on three feet, and make him stop suddenly. This is the best way known to teach “Whoa,” though you can put on the war bridle, and give him a sharp jerk that will stop him about as soon as the strap to his foot. Then put him in harness, with the foot strap, as directed under the head of “Training to Harness,” and drive him up to the door. The moment he undertakes to move, take his foot and say “Whoa.” Get in your carriage and get out again; rattle the thills; make all the noise getting in and out you can; give him to understand, by snatching his foot each time he moves, that he must stand until you tell him to go and after a few times you can put the whole family in the carriage, and he will not stir out of his tracks.

TRICKS OF HORSE DEALERS.—Unless a man is accustomed to horses, it is the greatest folly in the world to depend upon his own knowledge in purchasing them, for there is a class of men who make their living by bringing up horses with all manner of defects, and which their art enables them to disguise just as long as is sufficient to take in their dupes. In buying as well as selling are these deceptions practiced. A few of these “tricks”; are as follows: *To Make a True-pulling Horse Baulk.*—Take tincture of cantharides one ounce, and corrosive sublimate, one drachm. Mix, and bathe his shoulders freely at night. *To Make a Horse Appear as if Lame.*—Take a single hair from the tail; put through the eye of a needle; lift the front leg, and press the skin between the outer and middle tendon or cord; shove the needle through; cut off the hair on each side, and let the foot down; the horse will go lame in twenty minutes. *To make a Horse Stand by his Food and Not Eat It.*—Grease the front teeth and the roof of the mouth with common beef tallow, and he will not eat till you have washed it out. *To Make a Horse Appear as if Badly Foundered.*—Take a fine wire and fasten it tight around the fetlock, between the foot and heel, and smooth the hair over it. In twenty minutes the horse will show lameness. Do not leave it on over nine hours. *To Cure a Horse of the Crib or Sucking Wind.*—Saw between the upper teeth to the gums. *To Cover Up the Heaves.*—Drench the

horse with one quarter pound of common bird shot, and he will not heave until they pass through him. *To Make a Horse Appear as if He Had the Glanders.*—Melt four ounces of fresh butter, and pour it into his ear. *To Nerve a Horse that is Lamé.*—Make a small incision about half way from the knee, to the joint on the outside of the leg, and on the back part of the shin bone you will find a small white tendon or cord; cut it off and close the external wound with a stitch, and he will walk off on the hardest pavement and not limp a particle, *To Disguise Lameness.*—When a horse goes dead lame in one shoulder, it can be disguised by creating a similar lameness in the corresponding leg, by taking off the shoe and inserting a bean between it and the foot. *To Put Black Spots on a White Horse.*—Take of powdered quicklime one-half a pound, and litharge four ounces. Well beat and mix the litharge with the lime. The above is to be put into a vessel, and a sharp lye is to be poured over it. Boil and skim off the substance which rises on the surface. This is the coloring matter, which must be applied to such parts of the animal as you wish to have dyed black. *To Produce a Star on a Horse.*—Take a piece of coarse tow-linen, the size of the wished-for star; spread on it warm pitch, and apply it to the shaved spot; leave it on two or three days, when wash with a little smart water, or elixir of vitriol, two or three times a day until well. When the hair grows it will be white. *To Make an Old Horse Appear Young.*—This is done by filing the teeth, the dark markings on which are removed by a hot iron. Filling up the depressions over the horse's eyes, by puncturing the skin over the cavity, and filling through a tube by air from the mouth, and then closing the aperture, when the brow will become smooth—for a time. The white hairs are painted out, when the animal will altogether have a youthful appearance.

HOW TO JUDGE AND SELECT A HORSE.—*Color.*—Light sorrel or chestnut with feet, legs, and face white, are marks of kindness. A deep bay, with no white hair, will be a horse of great bottom, but a fool, especially if his face is a little dished. They are always tricky and unsafe. A black horse can not stand the heat, nor a white one the cold. The more white about the head the greater his docility and gentleness. *Eye.*—If broad and full between the eyes, he may be depended on as a horse for being trained to anything. *Ears.*—Intelligent animals prick up their ears when spoken to; vicious ones throw theirs back: *Face and Neck.*—Dish-faced horses must always be avoided, and a broad forehead, high between the ears, indicates a very vicious disposition; while a long, thin neck indicates a good disposition; contrarywise, if short and thick; the nostrils of a good horse should be large.

TO DESTROY COCKROACHES AND BEETLES.—1. Strew the roots of black hellebore, at night, in the places infested by these vermin, and they will be found in the morning dead, or dying. Black hellebore grows in marshy grounds, and may be had at the herb shops.—2. Put about a quart of water sweetened with molasses in a tin wash basin or smooth glazed china bowl. Set it at evening in a place frequented by bugs. Around the basin put an old piece of carpet that the bugs can have easy access to the top. They will go down in the

water and stay till you come.—3. Take pulverized borax 4 parts, flour one part, mix intimately and distribute the mixture in cupboards which are frequented by the roaches, or blow it, by means of a bellows, into the holes or cracks that are infested by them.—4. By scattering a handful of fresh cucumber parings about the house.—5. Take carbonic acid and powdered camphor in equal parts; put them in a bottle; they will become fluid. With a painter's brush of the size called a sash-tool, put the mixture on the cracks or places where the roaches hide; they will come out at once. Then kill.—6. Mix up a quantity of fresh burned plaster of Paris (gypsum, such as is used for making molds and ornaments) with wheat flour and a little sugar, distribute on shallow plates and box board, and place it in the corners of the kitchen and pantry, where they frequent. In the darkness they will feast themselves on it. Whether it interferes with the digestion or not, is difficult to ascertain, but after three or four night renewal of the preparation, no cockroaches will be found on the premises.

TO FLAVOR WINE.—When the vinous fermentation is about half over, the flavoring ingredients are to be put into the vat and well stirred into the contents. If almonds form a component part, they are at first to be beaten to a paste and mixed with a pint or two of the must. Nutmegs, cinnamon, ginger, seeds, etc., should, before they are put into the vat, be reduced to powder, and mixed with some of the must.

TO MELLOW WINE.—Wine either in bottle or wood, will mellow much quicker when only covered with pieces of bladder well secured, than with corks or bungs. The bladder allows the watery particles to escape, but is impervious to alcohol.

TO MAKE WINE SETTLE WELL.—Take a pint of wheat and boil it in a quart of water till it bursts and becomes soft; Then squeeze through a linen cloth, and put a pint of the liquor into a hogshead of unsettled white wine; stir it well about, and it will become fine.

TO COLOR APPLES WHILE GROWING.—A bright red color can be imparted to growing apples by the application of the oxide of iron to the soil about the roots of the trees. Anvil dust and cinders, etc., will answer the purpose.

TO IMPROVE ALL SORTS OF SEED.—Charles Miller, son of the celebrated botanist, published a recipe for fertilizing seed, and tried it on wheat, by mixing lime nitre, and pigeon's dung in water, and therein steeping the seed. The produce of some of these grains is stated at 60, 70, or 80 stems, many of the ears five inches long, and fifty corns each, none less than forty.

ERRATA.

- Page 4, 22d line, read begun instead of began.
Page 27, 3d line, read restore instead of resore.
Page 58, 43d line, read Davies' instead of Davie's.
Page 59, 31st line, read La Salle instead of Le Salle.
Page 102, 36th line, read Pascha instead of Pasha.
Page 104, in square April 17, read xxvi instead of xxiv.
Page 106, 2d line, read A. M. instead of B. C.
Page 227, last line omitted: Washington (Capital U. S.), population 230,392, and Georgetown, population, 14,046.
Page 272, to preserve flowers in water.

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